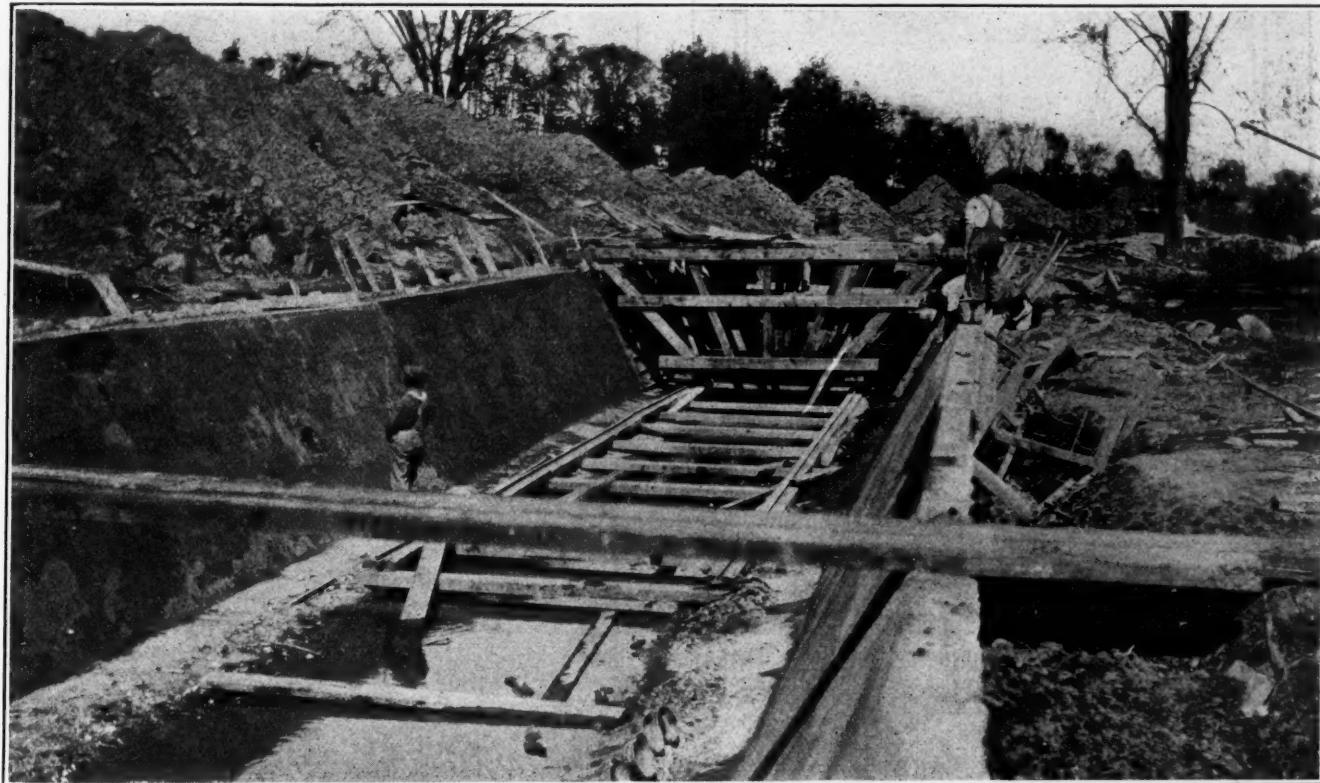


Municipal Journal

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No. 17



OPEN TRAPEZOIDAL SEWER.

New wall form in background. On right, plastering top of wall. On left, preparing concrete for plastering.

LARGE SEWERS IN NEWARK, N. J.

A Comprehensive Drainage System for a Portion of that City.—To Drain Seventeen Hundred Acres of Low Land—Open Channel and Concrete Pipe.—Construction Methods.

By E. S. RANKIN, Engineer of Sewers and Drainage.

While about 75 per cent. of the Newark sewers are constructed on the combined system, some of the outlying sections, and notably the former Borough of Vailsburg, are sewerized on the separate plan.

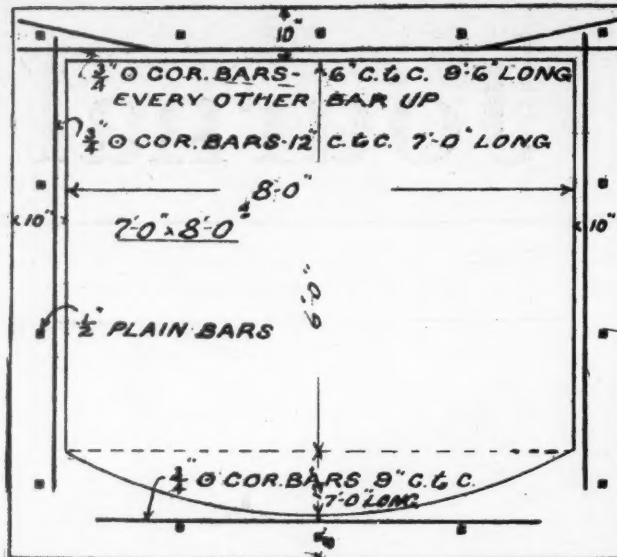
Ever since the annexation of this borough to Newark in 1905 complaints of flooding have been frequent, and much of the land is so flat and low-lying as to be unfit for building purposes. To remedy these conditions plans have been prepared for a comprehensive system of storm water sewers which will drain in all some 1,700 acres. About 800 acres of this watershed lies in East Orange, and that city will bear a portion of the expense, beside continuing the drain into her own territory.

The area to be drained consists of three approximately parallel valleys converging into one near the southern end of the city. Small streams now run through these valleys, uniting to form the east branch of the Elizabeth River. About 2,700 feet south of the

city line in the town of Irvington was an old mill pond with a dam about eight feet in height. This property, with the water rights, was purchased by the city and the dam removed in order to gain additional depth. It was considered advisable for several reasons not to let the contract as a whole and it was consequently divided in three main divisions, two of which were again divided into two sections each. Bids were received for the first section on July 3 and for the last on August 22, and work is now under way on four of the five sections.

The main details are given in the following table:

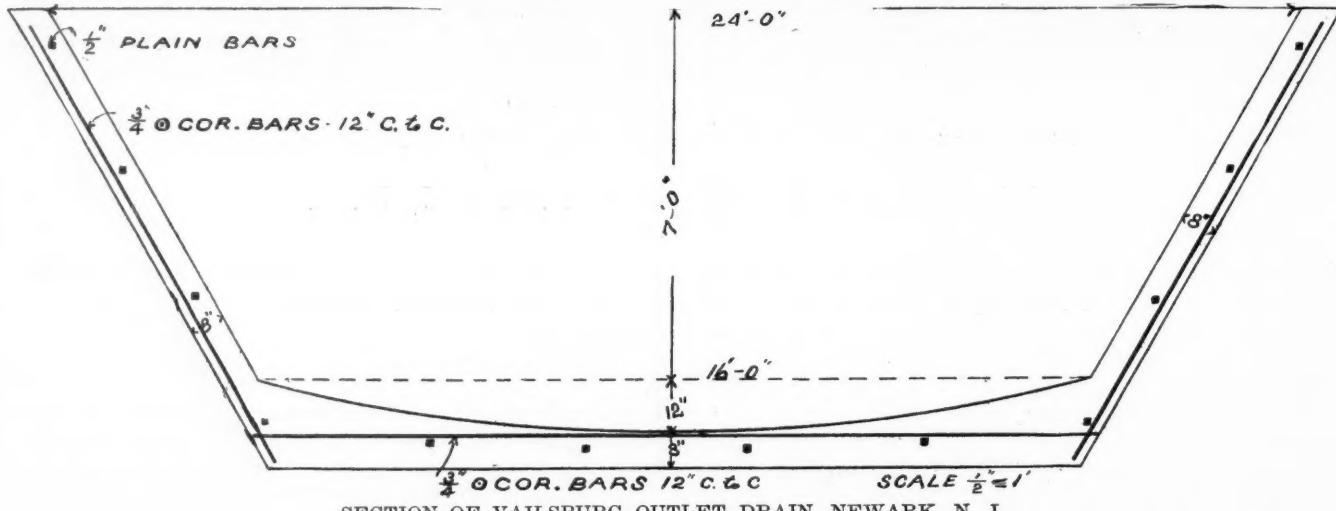
Contractor.	Length of Main Line, feet.	Length of Branches, feet.	Con- tract Cost.
Middle Div., Sec. 1. O'Gara & Maguire	4,650	....	\$81,790.90
Middle Div., Sec. 2. O'Gara & Maguire	3,760	940	55,270.10
Westerly Division. J. W. Heller	3,780	4,470	92,689.75
Easterly Div., Sec. 1. W. J. McCloud & Co.	5,610	....	77,980.20
Easterly Div., Sec. 2. Jas. A. Christie	....	4,205	18,217.95
Total	17,800	9,615	\$325,948.90



TYPICAL SECTION OF COVERED SEWER.

The contract also calls for 123 catch basins and 135 manholes.

The main lines are to be built throughout of monolithic concrete, the smallest size being circular, 5 ft. 6 in. in diameter, of plain concrete. All other sections, with the exception of the outfall through Irvington, are of rectangular shape and reinforced. The rectangular form was adopted on account of the head room not being sufficient to permit of arch construction. The sizes range from 6 ft. by 6 ft. to 7 ft. by 12 ft. The outfall, below the junction of the three lines, is a trapezoidal open channel 8 ft. in depth, with widths of 16 ft. and 24 ft. at bottom and top, respectively. About 800 feet of this has been completed and the work is progressing at the rate of about 30 feet per day.

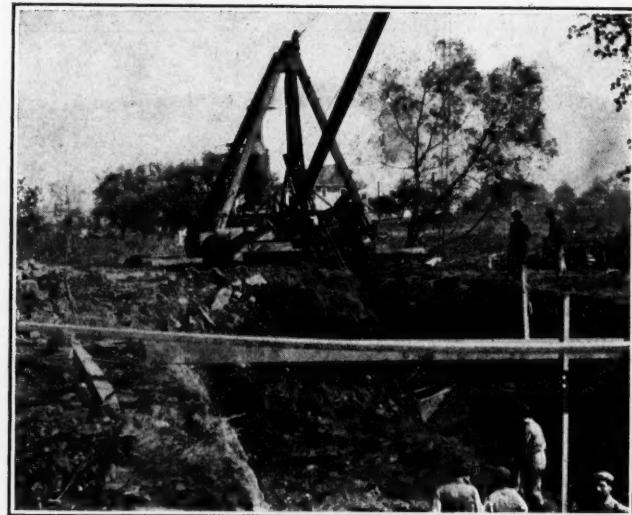


SECTION OF VAILSBURG OUTLET DRAIN, NEWARK, N.J.

Of the branches, all of the 24 inch and under are to be of vitrified pipe, and the larger sizes, running up to 48 inch, are of reinforced concrete pipe, furnished by the Lock Joint Pipe Company.

The excavation for the open channel is being made with a drag bucket of one cubic yard capacity. This method is especially applicable here, as the sides of the trench are sloping, and consequently no braces are used. The drag bucket used is of special form, the cutting edge being provided with steel points similar to those used on a steam shovel bucket. The bucket is suspended from the end of a boom of an ordinary derrick whose mast is revolved by the hoisting engine. A cable passing through the boom near the bottom and around

one of the drums of the hoisting engine serves to draw the bucket toward the derrick along the bottom and forward slope of the trench, no labor at all being employed in guiding or controlling the bucket. When the bucket has been drawn to the top of the slope the drag cable is slackened and the bucket raised, the boom swung around and the dirt discharged along the side of the excavation. All of this is controlled by the engineer at the hoisting engine. On a section of covered sewer which is being constructed by the same contrac-



EXCAVATING WITH DRAG BUCKET.

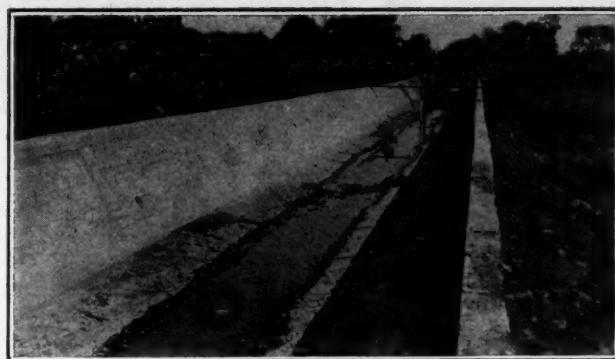
tor the drag bucket is used until the side slopes of the excavation meet at the bottom, or until sheeting and braces are necessary, when an ordinary bucket is substituted for the drag bucket, and the dirt is handled by the derrick acting simply as such. The derrick used

by this contractor is one manufactured by the National Hoisting Engine Company.

In another section of covered sewer the contractor is using an ordinary derrick and five half-yard buckets, four of these being continually in the trench while the fifth is being emptied into a Koppel car which runs on a narrow gauge contractor's track laid alongside the trench, by which it is carried to the rear and dumped as back fill. On the section adjacent to this one a contractor is using a cableway for raising the earth from the excavated trench and depositing it as back fill. All of these contractors find no difficulty in disposing of surplus earth, as all the surrounding land is low and needs raising.

A considerable part of the sewer is in such a shallow trench that a flat roof is required to give sufficient fill between it and street grade. In one section, however, the fill reaches 6 or 8 feet, but even here the roof is left flat, in order that house connections may be carried across it to the sanitary sewer which lies along one side of the street, the new sewer being used for storm water only.

Throughout the whole sewer a box drain is carried in the centre of the trench immediately below the concrete, and so far no difficulty has been encountered in keeping the trench dry by means of it, and an occasional pump which removes the water collected by it. Several kinds of pumps are used for removing this ground water, including centrifugal pumps, pulsometers and a gasoline-driven diaphragm pump furnished by Harold L. Bond. One of the trenches is now getting into running sand, but except for this all of the work has been in firm soil which stands up well and is easily shaped, but requires to be sheeted and braced. An ex-



COMPLETED OUTLET OF TRAPEZOIDAL SECTION.

bolted together. These two 60-foot plates are carried by a carriage or traveler which runs on a track laid on the concrete bottom of the sewer, this carriage being built up of wooden beams and carrying a working platform of plank on its top surface. The large plates are connected to the sides of this traveler by turn-buckles, there being three of these at each angle-iron joint of the plate—that is, at intervals of 5 feet—one vertical supporting the weight of the plate, and an approximately horizontal one at the top and another at the bottom of the angle-iron joint for adjusting the plate to the exact position, and for withdrawing it from the concrete when this has set and it is desired to move the form forward.

The engineer had anticipated that the soil in the bottom of the excavation of the open channel would not be as firm as might be desired, and had therefore provided for laying the concrete bottom with its under side horizontal and resting upon a timber platform; but fortunately practically the entire length of this trench was found to have a firm soil at the bottom and this was accordingly shaped parallel to the top surface of the bottom concrete, which latter was made 8 inches thick throughout.

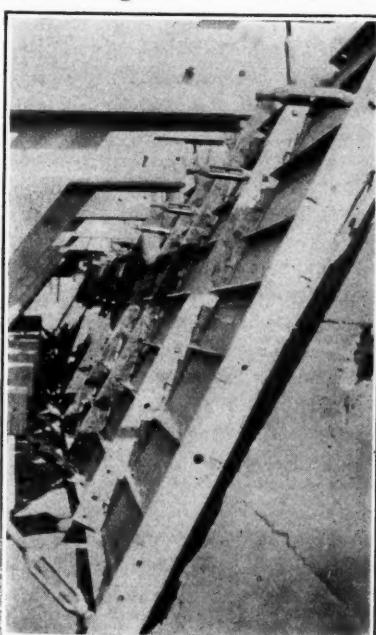
At the present time, three sections of concrete construction are under way. On only one of these concrete is being mixed by hand; on the other two Standard concrete mixers are being used. The concrete is mixed in the proportion of 1:2:5.

The smaller sizes of this system of storm sewers are being built of reinforced concrete pipe as stated above. The same make of pipe is being used in other sections of the city also, one contract under way including 64-inch pipe laid in a trench 25 to 35 feet deep. As an old storm sewer parallels this trench only 4 or 5 feet away and lying about 8 feet from the surface, careful sheeting is necessary to prevent the cracking of the banks and the rupturing of this old sewer. In this contract 2x8 plank sheeting is being driven by a steam pile driver furnished by the McKiernan & Terry Drill Co. Steam pile drivers have been used for sheeting in a few building excavations in this city but it is believed this is the first instance of their use for sewer construction in Newark.



OPEN TRAPEZOIDAL SECTION. BOTTOM COMPLETED. Shows wooden forms for side walls and reinforcing rods.

ception to this statement is the trench of the open trapezoidal sewer. Sheetings could not well be used for the banks of this, as the side slopes are somewhat steep, but the soil was not particularly good and no effort was made to trim the sides so that the concrete slopes would rest directly upon them, but the sloping side walls were built with forms upon the outside as well as upon the inner side, the outer form of plank being braced against the earth, and the space between the concrete and the earth being filled with tamped backfill after the concrete had set. The contractor used planks for both inside and outside forms until a few days ago, when he began to use steel forms furnished by the Blaw Steel Centering Company. This new form consists of two large built-up plates, one for each side of the trench, 60 feet long and extending from the bottom to the top of the side walls; each side plate consisting of 2x5-ft. plates fastened to steel angles which run from top to bottom of the wall, which angles are in turn

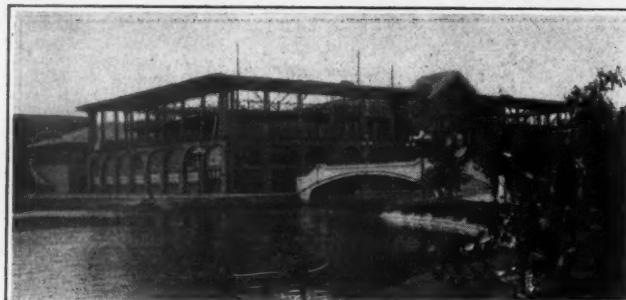


ONE OF THE SIDE FORM PLATES.

VENICE HIGH SCHOOL IS UNIQUE.

By C. L. EDHOLM.

In one respect the Polytechnic High School at Venice, California, is unique. There is no other city in the country which has made use of an abandoned bathhouse for school purposes, but this little city between the Pacific and the lagoons has done this and done it so well that no one would suspect that the classrooms are built over a great swimming pool. The commodious building has been idle for some years, as a new bathhouse had been built on the strand, and it finally oc-



SWIMMING PLUNGE TRANSFORMED INTO SCHOOL.

curred to some enterprising citizen that until a permanent high school building could be erected, the old plunge might be remodeled. This work is now being completed, and the result is that ample accommodations for the hundred or so high school pupils are now provided. The pool has been covered with a floor, the dressing rooms removed and the classrooms, laboratories and shops now take their place, twenty rooms in all.

The school is very modern in its courses, teaching such late branches as wireless telegraphy, while such modern methods of instruction as motion pictures are utilized. Another interesting feature of the Venice school is the printing of the students' paper, "The Gondolier," which is set up by student compositors. Aside from the regular high school studies, courses in domestic science, cooking and sewing are provided for the girls, and manual training in a well equipped shop for the boys.

While the little city is ambitious to build a high school edifice worthy of its future, yet the present makeshift is being put to excellent use, and the advantages of its central location and the beauty of its surroundings on the lagoon are appreciated.

COLORADO SPRINGS COMMISSION.

Result of Three Years Government by Commission—Unusual Features—Reduced Expenditures— No Partisan Politics.

Columns of matter have been written setting forth in general terms the great advantages of commission government, and to a less extent equally indefinite condemnations of the systems; but few definite statements giving actual figures and definite results have appeared. The former class of matter we have thought it useless to publish in this journal, but the latter we are glad to give space to. The secretary of the Colorado Springs Chamber of Commerce, A. W. Henderson, has made public a few definite statements (combined with several general ones and "opinions of citizens"), which we quote below.

Colorado Springs has been operating under the commission form of government since July 27, 1909, the citizens having adopted this in May of that year by a vote of 3,161 to 263. The form of government adopted differs from others in several respects. The powers of the city are vested in five elective officers—a Mayor and four Commissioners. Each of these men is the head of and is responsible for the conduct of one of these departments: Water and Water Works; Finance; Public Health and Sanitation; Public Works and Property; Public Safety. The Mayor, however, is given general supervision over every department, board or commission, and appoints all appointive officers, subject to the recommendations of the head of the proper department. He is in direct charge of the Department of Water and Water Works.

The ward system is abolished and the commissioners are elected from the city at large for a term of four years. The Mayor receives a salary of \$3,600 and the commissioners \$2,000 each.

Nominating conventions are abolished. All nominations are made by the filing of twenty-five individual certificates, the signer of each of which, as well as the nominee, must make affidavit to the fact that the candidate is not the representative of any political party. The charter provides: "Nothing on the ballot shall be indicative of the source of the candidacy or of the support of a candidate. No ballot shall have printed thereon any party or political design or mark, or anything indicating the views or opinions of the candidates." A majority of all votes cast is required; in case no one receives such a majority a second election is held. Except for invalids, no carriages are allowed on election day.

Provisions for the recall, the initiative and referendum are made.

Ample restrictions around the granting of franchises to public utility corporations are made and the right to own any utility is reserved to the people.

The levy is limited to twenty mills and the bonded indebtedness to 3 per cent. of the total valuation, except for the purchase of profit-yielding utilities. The Mayor is given the final power in fixing the levy; all estimates are submitted to him and no item in his budget can be increased.

Provision is made for a civil service, which provision has been carried out since the adoption of the charter by the naming of a commission of three and the adoption of as comprehensive and inclusive a system of civil service as is to be found in any city of the United States.

Mr. Henderson states that partisan politics has been eliminated and "the few City Hall employes who have dabbled in party conventions have received quick punishment in the form of suspension." Bookkeeping methods have been improved in practically every department and monthly statements required. "As an instance, in the Water Department the 11,000 accounts were formerly subdivided into five districts, requiring twelve ledgers; these accounts have been transferred to two ledgers, with the result that \$19,161.59 more was collected during the first twelve months under the charter than in the same period immediately preceding, and this without the use of extra clerks, as had previously been necessary. In the Police Department the force was reduced and the city as effectively patrolled by the lengthening of the beats. In the Street Department the same amount of work has been done with less men. In the Water Department total disbursements for labor, material and incidentals was \$1,775.36 less, although 60 per cent. more construction was done." Under the old form of government the profits of the Water Department were used to make up the deficits of other departments, but in the past three years the department has paid the interest on outstanding bonds, purchased new reservoir sites, extended the system and reduced the amount of outstanding bonds by \$100,000, although prior to this but \$15,000 had been applied to this purpose.

"When the new officers assumed charge in July, 1909, they faced a possible deficit of \$25,000, because of election expenses, necessary repairs and a reduction in druggists' licenses, but during the five remaining months of the year the Council kept up the efficiency of all departments, made a saving and closed the year with all bills paid and a balance of \$1,000, which was applied on an old debt. The revocation of licenses meant a loss of \$17,000 in revenue for 1910, and at the same time the

levy was reduced two mills, or \$25,000, but the affairs of the city have been managed during this year with no appreciable decrease in efficiency and in many cases to better advantage even with a revenue \$42,000 less than that of the preceding year."

CENTRIFUGAL FIRE PUMPS.

Advantages Include Simplicity, Low Cost and Direct Connection to Gasoline Motors—Appliances for Priming.

While the use of automobile fire apparatus is probably more general in this country than in Germany, it would appear as though the mechanical engineers of the latter country have developed the use of centrifugal pumps on such apparatus to a higher state of efficiency than has so far been reached in this country. This has been brought out by translations and abstracts made by *The Automobile* from a number of German periodicals. These articles go into considerable detail in describing the mechanical contrivances employed. Omitting this, we abstract below the general statements made.

The advantages of the centrifugal pump, as compared with the reciprocating piston pumps used with steam fire engines, lie partly in their simplicity, their low cost of production and in the fact that they function best at high speed and may be connected with a gasoline motor shaft without the use of cumbersome reduction gearing. They are also much less subject to wear—as from the effect of sand in the water supply—as the rotating vanes do not rub against the walls of the casing, and they greatly reduce the wear of hose, as the uniform pressure at which they may be operated obviates the to-and-fro motion of the hose on the ground which always accompanies the use of the reciprocating piston pumps of steam fire engines. The great danger to the firemen on ladders which arises when the hose in their hands suddenly stretches itself out rigidly because some of the outlets for water have been stopped and the pressure thereby has been suddenly increased, is also avoided with the centrifugal pump, which under all circumstances produces a pressure determined by its construction, its size, its speed and the pressure previously existing in the water supply, but can neither burst the hose by accumulated pressure nor stop the motor by abnormal resistance to its work. If the water outlets are all stopped the centrifugal pump continues to operate and, according to the data presented in the German trials, consumes under these conditions about 45 per cent. of the power required for the maximum throw of water. The same data indicate that a throw of 50 meters high and 75 meters distance is attained and that the vacuum pump admits of drawing water to the pump from a depth of up to 9 meters where no hydrant pressure is available.

The German papers lay particular stress upon the importance of a fire engine pump which will draw water from several feet below its own level, from which it would appear that in Germany the water supply of the fire engines is largely in the form of cisterns or streams rather than fire hydrants which deliver the water to the engines under more or less pressure. There are a number of cities and towns in this country where cisterns are extensively used, such as San Francisco and Louisville; and it is always an advantage to be able to draw water from a stream in the vicinity of the fire when no fire hydrants are within effective distance or when all which are in use.

If it be assumed that the ability to raise water several feet by suction is essential in fire engines, the centrifugal pump offers the objection that it will not do

this until a continuous column of water has been established between the pump and the water supply, either by exhausting the air in the suction hose or by filling the suction hose from a small water supply carried on the engine. Some of the German engines carry tanks holding 80 to 130 gallons, while on others the centrifugal pump is supplemented by an air pump for removing the air from the suction hose. In certain styles of engine the air or vacuum pump is built in one piece with the centrifugal pump. This vacuum pump is of the reciprocating piston type and is sometimes built so as to operate not only as an air pump to remove the air from the suction hose, but also as a water pump which may be left going in conjunction with the centrifugal pump. In other constructions, the vacuum pump operates as an air pump only, a device being provided for automatically closing it against the entrance of water.

These pumps are arranged so that the discharge can be changed from 4 gallons to 8 gallons per second at 1,600 revolutions per minute. When the number of revolutions is changed, similar variations may be obtained with each of the shaft speeds, and as a small change in speed makes a considerable variation in the work results, it is possible to suit widely varying requirements with a small variety of pump models.

PHILADELPHIA FIGHTS MOSQUITOES.

The Departments of Public Works and of Health of the city of Philadelphia have been working together during the past summer to see what can be done toward eliminating mosquitoes in the city and especially in the low lands at its southern end. Early in the summer, Council appropriated \$5,000 for studying the habits of mosquitoes and the best methods of eliminating them and \$12,000 for improved waterways which are necessary for drainage purposes.

By the end of the summer a force of 150 men was at work in various parts of the low lands referred to, cleaning out canals, road ditches and natural water courses, some of which have not been properly cleaned in 30 years. As the ditch gangs passed private property ditches, the owners of these were notified by the Department of Health to clean their private channels and most of the large owners agreed to co-operate with the city forces and lend every assistance. By the middle of September about four miles of main canals and two miles of private ditches had been cleaned out.

The drainage problem was in the meantime studied by the engineers, so that the system can be connected into one or more logical units; included in the plan being the installation of pumping plants where the whole water level may be lowered by pumps. They also investigated the question of raising the land by dredging from the river and by diverting there the ashes collected by the street cleaning department, as well as the best methods of treating lowlands and stagnant water with oil, where draining or filling cannot be done immediately, for the purpose of killing mosquito larvae.

The report of the department contains the following description of its experimental works:

"A study of the mosquito problem was begun by preparing a map of the city showing on it the location of all stagnant pools. An entomologist then examined each of these pools for larvae.

"The elimination of these stagnant pools would, however, be only a small part of the mosquito campaign, as the mosquitoes that so annoy the people in Philadelphia do not by any means all come from these places. It is

absolutely necessary to secure the co-operation of all citizens, for without such co-operation the mere cleaning of the marshes would be useless if the total elimination of the mosquitoes is to be hoped for.

"An experimental area of about one square mile in the vicinity of Point Breeze Park was taken for treatment, the money available for the purpose being not sufficient to cover the charges of more than this experimental area. Grass and weeds were cut down so as to destroy the daytime resting places of the mosquito, and all breeding places, of which there are a great many, were treated with oil. In and around the piggeries, where the most filthy conditions exist, larvae were found in all stages, and it is the opinion of the entomologist that the piggeries are one of the most fruitful sources of the mosquito pest in the city.

"This experimental work has resulted in virtually eliminating the mosquito from within the area treated."

CITY MANAGER FOR SUMTER.

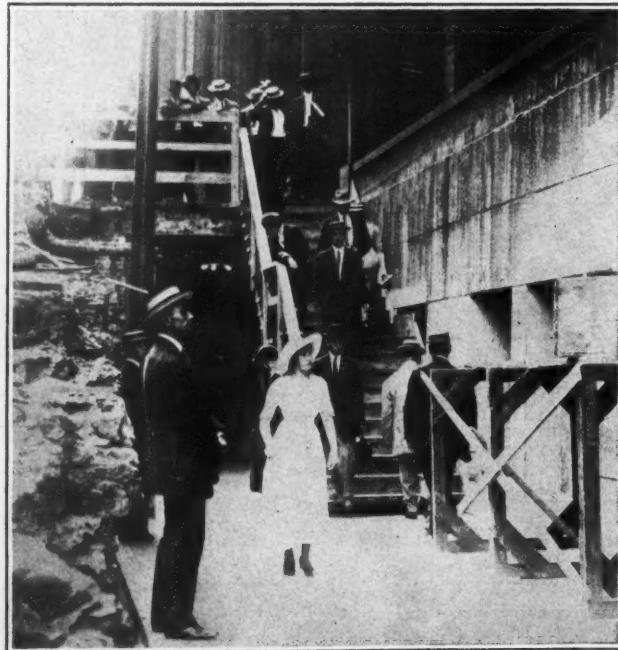
The city of Sumter, S. C., has just announced its desire to receive applications for the office of city manager, which applications will be received until December 1st. We have already described in our issue of December 29, 1909, how a small southern city, Staunton, Va., placed most of its business in the hands of a manager who is employed as would be the manager of a private business corporation, the council acting as the board of directors. The state constitution required that city to retain a council of two branches. Sumter, however, is going a little further than this. On June 12th the voters adopted, by a large majority, a charter which places the responsibility of the government upon the shoulders of three men, somewhat after the ordinary form of commission government. The initiative, referendum and recall are included in the charter, and in general the well-known Des Moines type of government was followed. But when it came to the matter of organization the Des Moines plan was found to be ill adapted to the local needs of Sumter. This city, which is one devoted to manufacture, has a population of about 10,000, and could not afford to pay the salaries necessary to secure the services of three competent men to run the several departments of the city. Furthermore, it

was regarded as folly to try to secure good administrative supervisors by popular election. But with the same amount of money it was thought possible to secure one good man who would take over the management of the city's affairs.

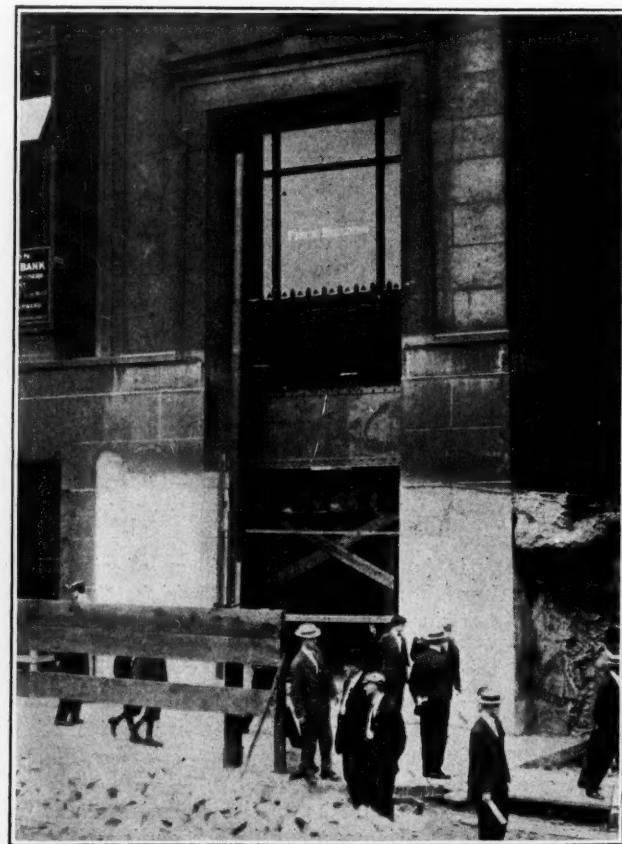
Such a man is now being sought by the city. He need not be a local resident, but a knowledge of local conditions and traditions will, of course, be taken into consideration. An engineer of standing and ability is preferred. The secretary of the Chamber of Commerce, A. V. Snell, states that "There will be no politics in the job, but the work will be purely that of an expert. The city manager will hold office as long as he gives satisfaction to the commission. He will have complete administrative control of the city, subject to the approval of the board of three elected commissioners." An indication of the desire of the commissioners to obtain the right man is the fact that they have asked that the applications for the position be filed with the Chamber of Commerce.

Under this plan, the city manager will have an opportunity to introduce modern accounting and efficiency methods. There is not believed to be any danger that he can build up a patronage through the appointing power, but he will have every incentive to appoint efficient subordinates rather than political hacks, since he will be responsible for the results obtained to the commissioners, holding office at their pleasure; which commissioners will in turn be responsible to the voters. The commissioners will receive nominal salaries (probably \$300 for the mayor and \$200 for the other two), but as they will be relieved of all administrative detail it should be possible to secure the ablest citizens for these positions.

This plan of municipal government carries to its logical conclusion the argument that municipal government is fundamentally a business proposition, and the success of Sumter's adventure will be watched with interest.



WHERE THE OLD AND NEW SIDEWALKS MEET



ORIGINAL SURFACE OF ALLEY AT THE RIGHT

THE PITTSBURG HUMP.

Work on the extensive cutting down of the street grades which pass over the hill known as the "hump" in Pittsburg, Pa., which was described in our issue of August 1, is progressing rapidly, and Fifth avenue will soon be ready for traffic, according to the announcement of Joseph G. Armstrong, director of the department of public works; while the Pittsburg Railways Company announces that it will have its cars running on Fifth avenue by October 28.

Fifth avenue has been closed since April last and is being hurried through, as it is the city's main artery of traffic and was needed more urgently than any of the other streets affected. The paving is practically finished and the car tracks are laid, but the wires for



PITTSBURG'S MAIN THOROUGHFARE.

the trolley lines have not yet been strung. The work is being finished far ahead of schedule.

The accompanying illustrations show how great a tearing up of the district and inconvenience to foot traffic (vehicular traffic is practically prohibited in the streets under destruction and reconstruction) is occasioned by this work.

A TRAVELING LIBRARY.

In Hagerstown, Maryland, a unique library system is in operation for the benefit of the people in the country districts. It is a rural free delivery of books through the county.

A 20 h. p. auto truck has been fitted up into a traveling library. A well-built box on the body of the truck contains shelves for two hundred volumes, besides from



TRAVELING LIBRARY IN MARYLAND

seventy to seventy-five cases containing fifty books each. The automobile is specially built to make the rough and hilly roads. It calls at all of the ranch houses on the main roads, leaving books which the farmer and his family selects from the shelves, and returns in ten days to make exchanges. There are seventy-five sub-stations, usually in country stores, where the people from out-of-the-way places come in to trade. At each of these stations a case of books is left for distribution. A simple ledger system is used for keeping track of the books.

Washington County, of which Hagerstown is the county seat, has an area of five hundred square miles. It has a population of 50,000 of which more than half are rural residents.

The librarian at Hagerstown, Mary L. Titcomb, is very enthusiastic over this important branch of the work and hopes that her reports will induce other libraries all over the country to follow a similar course.

FIRE DEPARTMENTS IN TWO SMALL CITIES.

The fire departments of two cities are briefly described below by the chiefs of their respective fire departments, and give a good, concise general idea of departments in small cities of the east and middle west.

Bessemer, Mich., has a population of about 5,000. The department comprises 2 hose wagons, a hose reel, 2 combined chemical and hose, 2 ladder trucks, all horse drawn; a hand reel, leak stoppers, wire cutters, tin cutters, cellar pipe and 5,000 feet of hose. Chief Edward G. Pascoe described the department as follows:

"The wagons in use are Gabriel Streich wagons with Archibald wheels, having Timkens roller bearings. Each wagon is equipped with a thousand feet of hose, two hand chemicals, a twenty-foot raiser and a sixteen-foot scaler.

"We use all first-class hose. We never have had occasion to use a leak stopper on any of them, and they are subjected to a pressure of one hundred twenty-five to one hundred fifty pounds. They are discarded as soon as they show any signs of weakening. We use the Eastman nozzles and they give the best satisfaction of any we have used.

"We have fourteen ladders, ranging from sixteen feet scalers up to forty-five-foot extensions. The forty-five-foot ladders are as long as we need, as the highest buildings on which we have to work are three stories.

"We also have several hand chemicals, axes, wrenches, spanners and everything that goes to make up a first-class fire equipment.

"We are very proud of our record, as we have not lost a building in the business district of the city during the past ten years. We have lost only two buildings during that time, and that was due to the city pumping apparatus being in a crippled condition at the time of the fires.

"We are a volunteer company. We turn out to all chimney fires, and receive a compensation from the city for the same. This seems to be a good plan, as this precaution lessens the number of serious fires."

Lewistown, Pa., has a population of 10,000. Its apparatus comprises a No. 2 Silsby and No. 3 La France engine, horse-drawn; 6 hand reels, a hand-drawn hook and ladder truck, and 3,200 feet of hose. A motor hose wagon will soon be in service carrying 800 feet of hose, 6 men and several small wall or scaling ladders. Concerning the department Chief Wm. F. Eckbert, Jr., writes:

"Lewistown has a good volunteer department, exceptionally prompt and efficient, notwithstanding lack of adequate apparatus. Water pressure is 70 to 80 pounds

on plugs and plugs are reasonably close, so that effective service has been rendered. The two steamers are held as reserve and have not been in active service for over a year, although always kept in condition for prompt work. The department does not own horses and local teams are pressed into service when their use is required.

"The department for many years was allowed to run "Go as you please" until the borough council authorized the office of fire chief two years ago. The department comprises five companies, containing 300 active men, and the rivalry usually existing in volunteer service is very keen.

"The department held a very successful field day last year and will again celebrate in a similar manner on Sept. 7. These affairs are found to keep up the interest in the work and are a great incentive to the men to keep up in their practice tests on runs, hose laying and other work.

"With the ordinary flimsy building construction usually found in an old town of this size and where building laws are very lax, we have not had a \$500 fire loss during 1912."

REPAIRING CITY PROPERTY.

By WILLIAM TALBOTT CHILDS, Deputy City Comptroller, Baltimore.

With an annual appropriation of from \$200,000 to \$250,000 for keeping in condition over 225 public buildings, such as school, engine and market houses, police stations, stables and municipal buildings, exclusive of appropriations sometimes running up into the millions for new structures, it can readily be seen that the city department in charge of such large sums of money becomes the beehive about which hundreds of jobbers and contractors swarm. Painters, roofers, whitewashers, supply men, plumbers, locksmiths, carpenters, stove and range men, particularly those who are in business in a small way on their own account, are on the trail day and night of the inspector of buildings, the city official who is responsible for the upkeep of the public buildings in Baltimore, and when they fail to get work from that official through their own solicitation, not discouraged, although disgruntled, they set to pulling the many political wires, through precinct boss, ward executive, city councilman, and higher, if necessary, until they are either flatly thrown down or get some of the \$200,000 to \$250,000 repair pie. If flatly thrown down, being human, they argue that they voted for the organization at the last primary and also at the general election and vow never to do so again. Of course, the threat to bolt the party is not as seriously considered as the threat to bolt the organization, for, if the organization cannot win in the primary, it cannot hope to get the plums in the general election, even though the party is victorious. To be sure, however, the organization generally knows its friends and threats, as a rule, have little effect.

The inspector of buildings at Baltimore is not pestered about contracts involving an expenditure of \$500 or more, because it is required by the city charter that all such contracts shall be first advertised in two or more daily newspapers published in the city for not less than ten nor more than twenty days and that the same shall be awarded by the Board of Awards to the lowest responsible bidder.

It is the contracts for work involving an expenditure of less than \$500 that the army of jobbers and contractors go for, such as whitewashing school yards, repairing leaks in roofs, putting new stoves and furnaces and heating apparatus in the public buildings, painting, glazing, plumbing and the thousand and one odds and ends of jobs necessary to prolong the life of the public build-

ings. With such a large sum of money at his disposal, the inspector of buildings could, if he were so disposed, distribute the repair pie among a small coterie of lesser political satellites, regardless of prices quoted, with the only provision that each quotation be less than \$500, so that the contract would not come within the city charter provision requiring advertisement and awarding by the Board of Awards to the lowest responsible bidder. "This is how they used to do it in the good old days!" say some of the wiseacres, but when you try to pin the accusers down to specific facts, they cannot or will not give any substantial evidence. In the meantime, however, a large percentage of the public gets the impression that, because graft has been proven in certain places, it is all the time going on wherever the public funds are being dispensed.

In order that the greatest degree of fairness might be exercised in the awarding of these contracts in amounts less than \$500, and with a view of getting the lowest possible prices for the city, indeed, of putting such contracts on a competitive rather than a patronage basis, a form known as a proposal sheet has been prepared by the inspector of buildings at Baltimore, and now, whenever repair work involving an expenditure of less than \$500 is reported to him, he mails proposal sheets to never less than two jobbers, designating exactly the work for which bids are invited, and the proposal sheets are returned to the inspector of buildings properly filled out and signed and become a valid contract when accepted, the contract being awarded to the lowest responsible bidder.

The proposal sheet is simplicity itself, as will be observed from the following reproduction:

PROPOSAL SHEET.

Baltimore.....

C. E. Stubbs,
Inspector of Buildings.

M.....

Please furnish estimate for the following work at.....
Items:

1.....
2.....
.....
10.....

Best of workmanship and material required.
Mr. C. E. Stubbs:

I herewith submit proposal to furnish all labor and material to complete the work as itemized for the sum of
Name
Address

When the inspector of buildings decides to whom he will award a contract, he draws up an order to such person and when the work is completed the contractor signs the order, signifying that he has completed it, and one of the inspectors of the office of the inspector of buildings, inspects the work and certifies on the original order to the completion of the work, whereupon the contractor mails the original order, properly certified, together with his bill for the work, to the inspector of buildings, who approves the bill and forwards same to the city comptroller, with the properly certified original order and also not only the signed proposal sheet by which the contract was awarded but all other proposal sheets submitted for that particular work. The bill is audited in the office of the city comptroller and, if found to be correct, payment is ordered and check in payment is mailed direct to the contractor by the city registrar. The official record of the entire transaction is kept in the office of the city comptroller. It is felt that the present system is fair and square to all concerned, city employe, contractor and taxpayer, and that the possibility for the greatest of all foes of the taxpayer, graft, is greatly reduced.

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CHANGE OF ADDRESS

Subscribers are requested to notify us of changes of address, giving both old and new addresses.

Contributions suitable for this paper, either in the form of special articles or of letters discussing municipal matters, are invited and paid for.

Subscribers desiring information concerning municipal matters are requested to call upon MUNICIPAL JOURNAL, which has unusual facilities for furnishing the same, and will do so gladly and without cost.

OCTOBER 24, 1912.

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Mail Box Problem.

One of the things which seem to be run in a haphazard fashion by our government is the establishing of mail boxes on city streets. It would seem at first thought as though the proper way would be to determine where boxes should be placed, and put them there. But if they are to be placed on posts, it is undesirable to multiply the number of these, and the Post Office Department has probably been justified in using for this purpose existing posts—generally lamp posts—even though these should not offer the best possible location for boxes.

But recent changes in modes of street lighting have introduced new difficulties. The electric lighting companies say that it would be dangerous to hang the regular boxes on electric lighting standards, and in one city at least the Municipal Art Commission would not indorse this. Some cities have refused to permit additional posts to be erected for mail boxes (or any other purpose) in the business streets, and the postal officials have refused to authorize the expense of specially designed boxes and posts. The result has been a de-

creasing number of boxes and less favorable distribution in a number of cities.

It naturally suggests itself that all of this difficulty might be avoided if the boxes were placed upon buildings (the difficulties are largely confined to business districts, where buildings are set at the street line), and this is done in a number of cases. But a new difficulty arises here in the refusal of owners to permit boxes to be placed on their buildings. On busy retail streets most of the store fronts are occupied by windows and doors, and it is difficult to find space for attaching the boxes, but such space is generally available on the cross streets not far from the corner.

Here is a subject for the consideration of the student of city planning in a broad sense. Once determine the location and nature of mail box which best meets all requirements, and a way can be found to carry out the idea. If it should be thought desirable to build the boxes in the walls of business blocks, with the door and lid flush with the wall surface, a way can be found by which the owners can be required to grant the permission.

Ozone Sterilization at Baltimore.

The Municipal Journal,

50 Union Square, New York City.

Gentlemen.—We wish to call your attention to some erroneous statements that have been made in certain papers read to the Central States Water Works Association, and published in certain publications, such as Engineering News and others, and published in your paper, relative to application of ozone to water sterilization. Mr. Legett of Ann Arbor, Mich., makes the positive statement that purification at Baltimore and other points has been an entire failure.

We would ask you to make the positive statement that such has not been the case, as we have been able to maintain a bacterial efficiency of 90 per cent., and further, that the only reason for withholding any data or statements relative to our work is that every indication has been that our bacterial reduction will be over 99 per cent. We discontinued the operation of our plant on about the 28th day of August to make certain changes which we believe to be final, the apparatus for which is now in course of construction, and up to that time we had obtained a water, from the operation of this plant, having a bacterial count of about 50.

Mr. Legett has never made an examination of this property, consequently is not in a position to make any statements whatever relative to its results or method of operation.

We, however, did send our chemist to Ann Arbor, Mich., and found that from the plant that he was then operating his bacterial counts were made on selective media and not in accordance with the standard method, and, therefore, for comparative results at that time were entirely worthless.

We have no desire to enter into any controversy as to the merits of Mr. Legett's present scheme, but desire to say that the last word has not been said relative to the process of purification by the application of ozone.

Yours very truly,

A. E. WALDEN.
Supt. and Chf. Engr., Baltimore County Water & Electric Co.

A City Planning Contest.

A specially appointed committee of the National Conference on City Planning is arranging to conduct this year a study in city planning, taking land on the outskirts of a growing city of about 200,000 to 300,000 population as the area which will be developed in plan by each competitor.

The purpose of this study is not that of an ordinary competition, undertaken as a means of selecting and premiating that one among the designs submitted which, upon the whole, after offsetting its merits against its defects, presents the most praiseworthy solution of the particular problem in question. It is rather a means of securing the co-operation of a number of people in

preparing and assembling specific and concrete illustrations of the application, under a given set of normal conditions, of a variety of important ideas and principles and devices used in city planning, in a manner which will facilitate a close comparison of their respective advantages and limitations.

It is expected that two or more members of the conference will collaborate in some cases upon a single plan. A single member may submit more than one plan or take part in more than one group submitting plans. Authors of different plans may consult with each other concerning their respective plans while in progress if they see fit to do so. It will be left to those submitting the plans to determine when such consultation amounts to joint authorship deserving recognition in the title of the drawings.

Participation in the proposed study is open only to members of the conference, but any one may become a member upon applying to the secretary, Flavel Shurtleff, 19 Congress street, Boston, and paying the membership fee of five dollars. In addition to the membership fee each entrant will pay a fee of five dollars toward the cost of the data furnished and the other expenses of conducting the study. Members of the Conference who notify the secretary of their intention of taking part in the study and pay the required fee will be enrolled as entrants, will receive the data mentioned below, and will receive copies of all notices, reports and communications sent out by the committee.

Each entrant will receive (1) topographical map of the tract with key map showing its relation to the city; (2) a copy of the Model Housing Law; (3) a copy of the Building Code recommended by the National Board of Fire Underwriters, New York; (4) a circular entitled Data for Proposed Study in City Planning undertaken by the National Conference on City Planning.

Arrangements will be made to have the participants in the study meet each other and the members of the committee at the City Club, 55 West 44th street, New York City, to discuss plans in process, on November 20, 1912; other dates for similar meetings will be announced later. Final plans with description must be presented on or before March 4, 1913. The plans accompanying statements, etc., are to become the property of the National Conference on City Planning and will be exhibited at the next meeting of the Conference.

REFUSE DISPOSAL IN EASTON, PA.

The plant and general equipment for collecting and disposing of refuse which is employed by the city of Easton, Pa., was described in our issue of December 28, 1910. Briefly it consists of a Morse-Boulger incinerator of 35 tons' capacity. Garbage and rubbish are collected from each building once a week and ashes once a week, the former being consumed at the incinerator, the latter hauled to dumps. Three-yard, steel body, rear dump wagons are used, each hauled by two mules.

The following data, covering the year from Nov. 1, 1910, to Nov. 1, 1911, were tabulated and calculations made by John McNeal (who was city engineer during the construction of the plant) from figures furnished by his successor, Frank H. Raub.

	Collected by city	Collected privately	Total
Garbage and rubbish...	2783.8 tons	787.5 tons	3571.3 tons
Ashes	5363 "	"	.....
Total	8146.8		

The weight of ashes collected is based on an estimated average weight of 800 pounds per cu. yd., there having been 13,408 cu. yds. collected. The cost of collection by the city was as follows:

Garbage and refuse collection.....	\$4,171.60
Ash collection.....	4,529.45
Oats, corn, hay, etc.....	1,362.30
Repairs and blacksmithing.....	163.11
Miscellaneous	335.11

	\$10,561.57
One-half salary of stableman and foreman....	450.00

Total	\$11,011.57
-------------	-------------

The cost of operating the incinerator was as follows:

Furnace labor (including $\frac{1}{2}$ salary of stableman and foreman)	\$2,238.00
Coal, 335.5 tons	1,197.56

Total	\$3,435.56
-------------	------------

Total operating cost, \$14,447.13.

Cost of burning 3,571.3 tons (operating expenses only), 96.2 cents per net ton.

Cost of collecting garbage, rubbish and ashes, \$1,311 per net ton.

Cost of collection and operation per capita per year, 48.1 cents.

One ton of coal used for each 10.64 tons of garbage and refuse burned.

The cost of the incinerator, land, stable, roads, etc., complete, was \$23,904. The equipment cost \$4,000. If we allow 15 per cent. for interest, depreciation, etc., on the plant and 25 per cent. on the equipment, we have an annual cost of \$4,585.60 to be added to the \$14,447.13, giving a total cost of the service of \$19,032.73, or 63.4 cents per capita for collection and disposal of all refuse, or about 8½ cents per week for an average sized household.

PARK BENCHES OF CONCRETE AND WOOD.

The Park Department of Pasadena, California, has placed benches of an original construction in the parks and at street intersections for the benefit of persons waiting for the street cars. The benches consist of two end pieces of concrete and three boards forming the seat and back rest. They are held in place by dowel pins. The concrete ends are moulded in one piece and are about two and a half inches thick, very massive and with rounded edges to prevent chipping. They have the advantage of being proof against weather and rough usage, and their great weight makes it difficult to remove them. Another advantage of this type of bench is that they can be loaded into trucks before assembling, carried to the various points where they are needed and set up in a few minutes' time.



PARK BENCH OF CONCRETE AND WOOD.

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Fire and Police Items—Government and Finance.

ROADS AND PAVEMENTS

Improvements in Columbus.

Columbus, Kan.—Columbus is completing a season of progress and development by commencing to pave its streets. Contractors have begun work laying an asphalt-concrete pavement on one of the principal streets. A sewer system, costing more than \$60,000, is nearing completion.

Paving Blocks Pass Severe Tests.

Sharon, Pa.—The paving blocks manufactured by the Sharon Clay Products Company, near Rose's Crossing, have passed severe tests with high marks and it is said have been declared superior to any bricks used by the State Highway Department. As a result they will be used on the Sharon and Sharpsville State road. The bricks were forwarded to Pittsburgh testing laboratory for analysis by Assistant Highway Engineer J. P. Buchanan.

Eight Miles of Good Road Built.

Suffolk, Va.—The new road between the Isle of Wight and Smithfield is now completed, and the eight miles of it finish the good road from Suffolk to Smithfield. Where it formerly took an automobile two hours to go over, one hour is all that is now required to make the trip. The road was built by R. E. Womble. It is a sand clay combination. The old hill at Benn's Church, which formerly was such a bugbear to autoists, has been filled and graded until it can be easily taken on high gear. Mr. Womble is proud of the eight miles of new road, and of the work that has converted into a smooth highway one of the worst bits of road.

Tar Coating for Slippery Paving.

Baltimore, Md.—To prevent the slipping of horses on the heavy Lexington street grade, between Charles and St. Paul streets, work has been started coating the vitrified brick surface with a mixture of tar and crushed stone. The work is being done by the United Gas Improvement Company of Philadelphia, under the direction of City Engineer McCay, who believes that by this means he has solved the problem of making the hill "seaworthy" on slippery days. Immediately after the paving of Lexington street, from Calvert to Charles, with vitrified brick, complaints began to be received at the City Hall of horses killed and injured by falling on the pavement made slippery by rainy weather. Shortly after coming into office the City Engineer, in an effort to relieve conditions, ordered the bricks on the heaviest portion of the grade, between Calvert and St. Paul streets, grooved. The cost of this work was approximately \$1.50 a square yard. This action, apparently, relieved conditions only slightly. The City Engineer set about to find a solution of the problem at a lower cost than grooving. The tar product is being laid for from 10 to 15 cents a square yard, and Mr. McCay believes it will accomplish the same purpose as grooving the bricks.

Asbury Road Experiment.

Asbury Park, N. J.—Of unusual interest to the people of Asbury Park is an experiment in road building being conducted by its engineering department on Park avenue, near the Deal Lake bridge leading into Allenhurst. The heaviest asphaltum oil which can be worked without being heated has been mixed with ordinary road gravel, and a stretch of roadway several hundred feet in length has been coated to a depth of five inches with this preparation. After the gravel was spread the heavy oil was distributed thickly upon the gravel base and harrowed in, the mass being turned over and over again, allowing the oil to penetrate deeply. The gravel was then rolled, and after it had hardened it was rolled again. Old-fashioned gravel streets, once the city's pride, are fast giving way to pavement of wood block, brick or asphaltum. No very serious objection to these forms of pavement were

made by the property owners as long as the improvements were confined to the business district, but a strong protest arose when Common Council suggested paving some of the leading arteries of travel through the residential sections. While admitting that the present form of gravel road is not adapted to the heavy wear of automobile traffic, the taxpayers along those residential streets Common Council proposed to pave, objected to the heavy form of pavement used downtown. The experiment being tried by the city engineering department on Park avenue will therefore be eagerly watched. Now that the paving of Main street, in Bradley Beach, from end to end of the borough, is finished, the borough of Avon, adjoining it on the south, is considering continuing the brick pavement along its principal street. This would make an unbroken brick or macadam road from Deal Lake to Shark river.

Commission Submits Report on Road Building.

Lansing, Mich.—State Highway Commissioner Townsend Ely has sent his annual report to the State Printer. He reports that from 500 to 600 miles of State reward have been built during the year in forty-four counties having adopted the county system. The work cost \$250,000. Applications were made for 640 miles and it is expected this will all be laid before the year ends. According to the Commissioner, 75 per cent. of the roads were constructed of gravel. Near the big cities, macadam proved the most attractive. The Commissioner reports that he is in favor of applying the tax on automobiles to the State highway fund. "The automobiles destroy the roads and they should pay part in maintaining them," he said. "I have talked with many owners and manufacturers and have yet to see one opposed to the plan. I believe the money should be turned directly into the coffers of the Highway Department and that the machines should be taxed according to their size and power, as the big, fast cars do much more damage to the roads than the little ones. The local tax on the cars should be eliminated."

New Concrete Bridge Under Construction.

Niles, Cal.—A new bridge of reinforced concrete is now being constructed by the supervisors of Alameda county over Alameda creek at Niles. This bridge is to replace the old structure, which has just been torn down, the greater part of it having survived its usefulness. One span of it will be used in placing the roadway in Niles



Courtesy Oakland Engineer.

CONCRETE BRIDGE OVER ALAMEDA CREEK.

canyon above the reach of the winter freshets in that section of the county, the roadway of which is usually destroyed early every winter. The new bridge, a picture of which is here presented, including approaches, is to be 612 feet in length. It will have five spans, the centre of which will be 110 feet in width, two more of 95, and two more still of 85 feet each. The cost will be \$75,000. The work is being rushed so as to have the structure ready before the coming of the rains. It will be beyond the reach of the swollen tide which, in winter, fills the space between the banks of Alameda creek.

Oklmulgee to Try Asphalt Paving.

Oklmulgee, Okla.—City Commissioners awarded the contract for 8,000 square yards of Bermudez asphalt paving on the Seminole avenue paving district, at \$1.60 per square yard. This will be Okmulgee's first experience with asphalt paving.

Work of Repairing Highway Finished.

Laramie, Wyo.—Button Brothers, who have been doing the work on the LeBonte canon road under the direction of the Laramie Literary Club, have completed the task and brought their camp and equipment to the city. The road through the canon, as far as the county line, has now been gone over with greatest care, and is pronounced perfect in every way. All the stones have been removed, the culverts have been repaired, and the bridges, both in the canon and elsewhere, have been repaired or new ones built. The road through the canon was changed in some respects, so that it is now an all the year round road, excellent for automobiles. The road beyond this county, clear to Douglas, has been put in fine shape, so that it is now but a seven or eight hour drive from Laramie to Douglas with an auto. The work of this road was supervised by the Literary Club with the consent of the County Commissioners, who, after careful inspection of the work, pay the necessary bills. The work was performed at exceptionally reasonable cost to the county.

Street Improvements in Mitchell.

Mitchell, S. D.—Contractor Atkinson, of Watertown, has put the finishing touches on the \$50,000 street paving work. The work was commenced early in July, and but for a delay of ten days in the absence of material and the shutting off of the city water the work was carried on without interruption. The paving has been used since the middle of July as it was finished and tested, and it has been pronounced satisfactory. Eight blocks on Main street were paved, and a half block each side of Main up to Fifth street was also paved. In another week the cluster lights will be finished, as the globes have arrived. The two improvements have cost the city nearly \$60,000, not to mention a sewer contract and the installation of water mains and catch basins at a cost of over \$15,000 additional. With the completion of this work the city's improvements will be in fine shape.

Refused to Extend Time.

Chisholm, Minn.—The laying of the concrete blocks for the paving of Lake street has commenced. It is expected that the creosote blocks will continue to arrive so that the work will be pushed to its completion without further breaks. The work has received so many setbacks that people were beginning to wonder if it would finish this fall. The contractors are paying \$25 a day penalty for every day the work remains unfinished, but claim that they could not get men in sufficient number to keep the work going, and at the last minute when they were ready for the blocks they learned that the company furnishing them could not begin delivery until about October 1, the day the penalty for completed work began. The village Council refused to extend the time limit on the contract and so notified the contractors.

Automobile Street Damage Costly.

Providence, R. I.—The damage done to the streets of the city of Providence by automobiles has caused an activity in the department of highways that exceeds any previous period of such work in the history of the city. According to Commissioner of Public Works Slade, the weekly pay roll for day work on the repairs of the highways is now \$12,000, a figure never reached before on this kind of work, and which may become even larger before the setting in of the winter season. "We have never had so much activity in this department as now," said Mr. Slade, "and that includes the highways, the water works and the sewer departments, the latter two of which have to get their work through at once whenever a street is torn up to be repaired. "This highway rush," he con-

tinued, "is due to the fact that we have had to abandon the old macadam construction on many of our highways because of the great damage done to the roadways by the automobiles. We have had to break up several miles of macadam streets and have laid instead granite blocks, wood pavement, asphalt, bitulithic pavement or bitumen-bound macadam. We have been forced to this action in order to provide roadways which shall stand the heavy wear caused by the automobiles. Three big contracts on street work are also being rushed along with our own day work, the contracts being on Thayer street, Dudley street, Spruce street and a short section of Fulton street."

Road Improvement Completed.

Rochester, N. Y.—Woodman road asphaltic concrete improvement has been completed by the J. Friedrichs Company, and there is now a fine driveway from Norton street to the entrance of Durand-Eastman park. The road is about 2½ miles in length and cost of the improvement was about \$37,000. Joseph F. Ribstein, in charge of the construction work, announces that the state road being built to Nine Mile Point would be completed by the end of the week, from the Waring road to Nine Mile Point. This is another improvement the completion of which automobilists have been eagerly awaiting. The Ridge road from Portland avenue is now completely closed for a considerable distance east to permit of the laying of an asphaltic concrete roadway along that highway. This is the improvement that was held up by litigation for more than a year before any decision could be reached as to the widening of the highway sufficiently to permit of the Rochester & Suburban Railroad Company double-tracking its route. The grading of the road and cutting out of a large number of trees is now in progress, and it is hoped to have the work completed within six weeks. Some little delay was experienced, according to the contractors, because of the slowness of the railroad company in getting in its new tracks and relocating poles.

4,700 Miles of Main Highways Are Repaired.

Harrisburg, Pa.—More than 4,700 miles of main highways in Pennsylvania have been repaired and put in good condition since the State took possession of them last June. Virtually all of this work has been done in three months, as some little time was required by the State Highway Department to get its repair campaign under way and systematic operations were not possible until about the beginning of July. One of the first things to be done was to cut away the old-fashioned water bars which used to be a serious impediment to travel throughout Pennsylvania. Thousands upon thousands of these abominations have been sliced off, and today there is not a "thank-ye-mam" left on all of the 4,700 miles of road above mentioned. Next in importance has been the ditching and underdraining by means of which the surface water is carried along beside the roadbed and through culverts under the surface, instead of being permitted to form ruts and gullies in the driveway. Another distinct improvement has been the removal of under brush and overhanging trees on either side, so as to insure that the sun shall get at the roads and dry them up quickly after rains. Drainage has been facilitated also by the substitution of the crowned surface for the old flat road which held the water for days in low places. Most of the work has been with the materials at hand, but in some instances macadam construction has been used.

Brick-Testing Machine Is Money-Saver.

Elizabeth, N. J.—Street improvements which will cost in the aggregate about \$110,000 are now under way in Elizabeth and indications lead to the belief that the present year will break all records for street paving work. The City Surveyor's office is experiencing one of the busiest periods in its history in an effort to complete the bulk of the work on the streets before cold weather sets in. In addition to keeping tabs on the paving and sewer building jobs, the City Engineer has to prepare the tax maps, prepare plans for contemplated improvements and make three or four brick tests daily. Samples of every carload of brick to be

used in city work are subjected to severe tests. The importance of these examinations is shown by the fact that material shipped here for street work is sometimes rejected. The tests are made in the city yards under the supervision of the City Engineer. It was only a few weeks ago that a brick testing machine was added to the equipment of the Street Department, and in this short time it has saved the city more than it cost. The apparatus was installed at an expense of about \$475. Since it was placed in operation forty-six tests of brick have been made. Formerly brick was sent to Newark for examination and the cost of the test was \$12. In addition to this, the carting cost about \$3. At the present time the only expense is the cost of electric power and the time of the men operating the machine. This is estimated at about \$3 per test. It does not require much knowledge of mathematics to prove that the city has already saved \$552 by the purchase of the brick tester or \$77 more than the machine cost. And it will probably be serviceable for several years more.

Complete Half of Boulevard Extension.

Duluth, Minn.—More than two miles of the boulevard extension from the Oneota cemetery to Fairmount Park has been finished and workmen are now at work on the remainder of the road. The boulevard will not be completed this winter as expected, but will be ready for use early next spring. The new boulevard will open this end of the city to automobileists and with the opening of the proposed Fairmont Park addition it will be one of the most popular driveways in the city. The extension runs along two small streams after passing the cemetery and crosses Kingsbury creek in entering the park. The boulevard extension from the cemetery and including the strip already finished and known as the Bay View boulevard, is about four miles long. It runs through one of the most beautiful sections of the city. The boulevard has a slight down grade in entering the park. The proposed Fairmont Park extension south of the present park on the bay front is expected to materialize next spring. The park board is now condemning the property and it is expected that some final settlement will be made with the property owners this winter.

SEWERAGE AND SANITATION

Village Fever-Stricken.

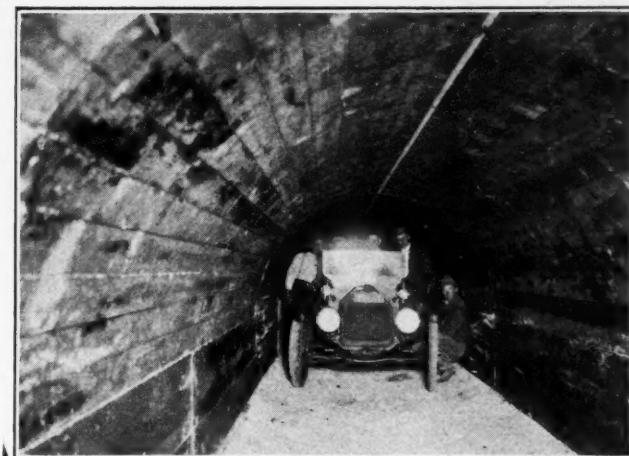
Troy, Pa.—The village of 1,500 inhabitants is suffering from an epidemic of typhoid fever. More than 100 now are ill of the disease, most of the cases having developed in the past few days. Elmira, N. Y., doctors and nurses are lending aid, and a temporary hospital is being arranged. In nearly every family in the town some one is ill, but so far there have been no deaths.

Newark Sewer Work Held Up.

Newark, N. Y.—All work on sewer contract No. 1, which was started last May, has been stopped by an order of the Municipal Board of Newark, and the construction of approximately twenty-one miles of sewer at an expenditure of over \$68,000, which was held by Stephen Flanagan & Son Construction Company, of Scranton, Pa., has been annulled. This action was taken by the Municipal Board. The action of the Municipal Board was a sequel to a written statement made to the board on September 9 and one on September 27 by the City Engineer, Charles L. Kelley, in which statements Mr. Kelley affirmed that the said contract is not being performed according to the conditions, agreement and covenants and that the work is unnecessarily delayed. The board passed a resolution notifying the Stephen Flanagan & Son Construction Company to discontinue all work under the contract and to surrender possession of the village streets and of all sewer materials, implements, etc., of every description as provided by article 7 of this contract. The board further resolved to finish building the sewer system and have withheld from the construction company certain moneys according to the terms of the contract, in case the contractor did not fulfill the terms of the agreement.

Makes Official Inspection in Automobile.

Portland, Ore.—In making an official inspection of the newly completed trunk No. 2 of the East Stark street sewer, Chief Engineer Hurlburt, accompanied by Inspector Wilhelm and Chauffeur Flaherty, drove the small Buick car used by the inspectors of the Engineer's department through the seven-foot bore. The superintendent in charge of the



Courtesy Portland Evening Telegram.

BRICK CAR MAKES TRIP THROUGH SEWER.

work was J. H. Johnson, of the Consolidated Construction Company, and the head foreman on the trunk branch is J. P. O'Neil. E. E. Crout is the material clerk and W. P. Wilhelm the inspector. The big pipe begins at the river at the foot of East Stark street and extends through to a point near Montavilla, with a trunk line leading off to the south about halfway out. The length is two and a half miles and the cost, with the branch, will be approximately \$250,000. Construction was started the middle of May and the sewer will be completed November 1. It will drain Laurelhurst, Rose City Park, Montavilla and everything in the Mount Tabor district north of Belmont street and east of Thirty-ninth street. The concrete sections are cast in oval form at the top of the ground and are lowered into the trench by means of derricks. Each section weighs more than three tons, and after being placed in the ditch they are fitted together with lock joints and iron bands, making them absolutely air-tight.

Typhoid Epidemic in Towns Along Susquehanna.

Harrisburg, O.—Warning has been sent to a number of towns taking water from the north branch of the Susquehanna that typhoid fever prevails at Troy, Bradford county, 70 cases being reported. The warnings went to Wilkes-Barre, Berwick, Danville and other places.

WATER SUPPLY

New Water Plant Crippled.

Bridgeton, N. J.—Bridgeton's \$100,000 water plant, practically ready for service, has been temporarily rendered useless by the breaking of the walls of the coagulating basin. The water had just been turned on for the first time into the concrete tank; when the basin was nearly filled, the north wall gave way under the pressure and the water gushed forth through the big opening.

Offer Prizes for Essays on Water Waste.

Philadelphia, Pa.—That interest may be stimulated among school children in the campaign against water waste, the Water Conservation Committee appointed by Mayor Blankenburg has arranged to distribute \$44 in prizes among pupils in the public schools. "Water waste" buttons are being distributed among school children, and they are requested to visit the exhibit in the City Hall courtyard, after which they will enter into competition in writing a description of the exhibit. For the best essay written by any boy in the schools of Philadelphia of the rank of the seventh or eighth grades and who has received a

button and promised to visit the exhibit, which essay shall have for its subject anything relating to economy in the use of water, a prize of \$10 in cash will be given. Another prize of \$10 in cash and under similar conditions will be given to the best essays written by a girl. Second prizes of \$7 in cash will be given to the next best essays, under similar conditions, to a boy and girl. Third prizes of \$5 in cash will be given to the next best essays, under similar conditions, to a boy and girl. The competing compositions are to be numbered and without the name of the writer, accompanied by a sealed envelope in which shall be placed the name of the writer and with the corresponding number on the envelope. The composition and envelope are then to be returned to the teacher, who shall forward them to C. E. Davis, Chief, Bureau of Water, Room 790, City Hall, on or before November 10. The compositions will be examined and the several prizes awarded within 10 days thereafter.

City Water is Declared Pure.

Lansing, Mich.—Because of the number of typhoid cases in the city State Bacteriologist Holm has analyzed specimens of the city drinking water taken by Dr. Fred. M. Huntley from all wells supplying the city. Both physicians state that the water supply is pure and the local milk dealers are now furnishing clean milk. The physicians attribute the increase of typhoid to unsanitary conditions in many homes. Twenty cases are on the records.

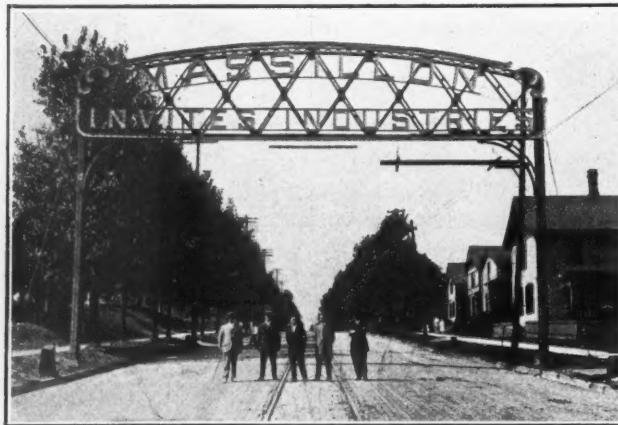
Huge Water Tank in Mozier Bursts.

Mozier, Pa.—The 2,000-gallon Erie tank on the hillside of Mozier collapsed one afternoon of last week, releasing a deluge of water, and Steve Shestock, a foreigner, who was working under the tank, was caught in the torrent and carried down a gulley for 150 yards. He sustained fatal injuries. The tank was being repaired when the accident occurred. A twin tank, close by, collapsed a short time ago, but nobody was injured at that time.

STREET LIGHTING AND POWER

Massillon Erects Electric Slogan.

Massillon, O.—An electric sign bearing the city slogan was recently built over West Main street. The slogan sign committee of the board of trade after an extended campaign raised a fund of \$700 to pay for the erection of the sign which is lighted by 500 incandescent lights—the



Courtesy The Independent.

ELECTRIC SLOGAN OVER WEST MAIN ST.

current for the lighting being furnished free by the Massillon Electric and Gas Company. The sign, which is erected near the Baltimore and Ohio station, bears the slogan, "Massillon Invites Industries." The Board of Trade committee is composed of J. J. Wise, chairman; Fred W. Justus, Jerome F. Shepley, Elton Rice and J. B. Johnson.

Electric Light System for Oakland.

Oakland, Ia.—The Oakland Electric Co. has just completed their plant and the streets are lighted with electricity. Nearly all of the business houses have been wired and the residences are having the work done as fast as the company can get to them. Dan Dermeyer, the manager of

the electric company, is entitled to great credit in this enterprise, as he has installed an up-to-date electric plant and is giving the people of Oakland excellent service. The council, in special session, has authorized the mayor and clerk to contract with the McDonnell Boiler and Iron Works of Des Moines for seventeen five-light electroliers, with the necessary material and conduits to install them. These electroliers are to be placed on Main street and Oakland avenue, with one at the depot grounds. The money to pay for them was subscribed by the citizens of Oakland and the city will furnish the electric current. The council has lately passed an ordinance ordering off all telephone and telegraph poles from Main street and Oakland avenue, and the work of removal will begin at once.

New Park Lighting System Is Tested.

Springfield, Ia.—The new system of boulevard lighting recently installed in the park districts of the city was turned on and 250 of the 300 electric lamps to be installed responded. The effect was beautiful and a great improvement over the old Welsbach lamps. Failure of about fifty of the concrete posts to arrive in time prevented the operation of the entire system, but with the exception of a few lights in the north end of Lincoln Park and in Mildred Park the whole park system was lighted with the new globes. The system is less than half as expensive as the old gasoline lighting. It costs the Park Board \$14.50 a year to operate each lamp, the lights to burn every night and all night long. Another advantage in the new system is the fact that the electric lights throw an 80-candle power light as against a 50-candle power light.

FIRE AND POLICE

Women Police Workers to Meet in Portland.

Portland, Ore.—At the request of women police workers of the Pacific Northwest, Mrs. Lola G. Baldwin has called a conference of women engaged in police work in Portland for October 24. Workers will come from Seattle, Spokane, Tacoma, Vancouver, B. C., and Bellingham, Wash. It will be the first conference of the sort ever held in the United States, the women agreeing upon Portland as the proper seat of the conference because of the fact that Portland, with the department under the superintendence of Mrs. Baldwin, began the first systematic preventive and protective police work for women in this country. The women will consider problems and methods relating to women's work on the police force. It is understood that at this conference objection will be registered to women police officers in street service.

Revere Fire Station Ablaze.

Revere, Mass.—The roof of the central fire station was discovered to be ablaze one night last week and the news was telephoned to the Police Headquarters. From there word was sent to the fire station, and before the firemen who were in the station got out the apparatus from the burning building over their heads and had extinguished the flames the roof had been practically burned off, causing a loss of \$1,000. This is the second time within a month and the third time within a year that there has been a fire in the Revere central fire station. Last spring defective wiring caused a blaze; a month ago the chief's automobile took fire in the middle of the night, and the last fire was again caused by defective wiring.

Rim of Engine Wheel Sounds Alarm.

Winnetka, Ill.—Serving the purpose of a fire alarm, the broken rim of a locomotive driver hangs in a wooden frame in the village hall park in Winnetka. It has been doing duty for upward of two decades, and it seems likely to hold its function for all time. Winnetka has a village hall, with a big and resonant bell in the tower, but when the day or night watch gets a call over a system of electric wiring that takes in each and every section of the place he seizes a big hammer and makes for the driver rim, rather than pull the rope of the bell in the tower. This queer contrivance was improvised from the gift of a Northwestern Railroad man who lived in the village. After it was broken while serving its natural function it was rescued from the junk pile and presented to the village fire department.

MOTOR VEHICLES

Will Have Auto Supply Wagon.

Paterson, N. J.—The Thomas touring car which the Board of Fire and Police Commissioners bought six months ago, and which has been used as an instruction car for the firemen while they have been learning how to handle automobile apparatus, is to be converted into a supply wagon. By orders of Chief Coyle, Master Carpenter Crotty, of the department, began work on a wagon body which is to replace the tonneau now in use. When the work is completed, the Paterson department, like those in other cities in the state, will have an auto supply wagon. The new body will be constructed so that the change from a supply wagon to a touring car may be made in a short time. When placed in service again the car will have a red coat of paint like all the other automobile apparatus.

Ladder Truck of Unusual Design.

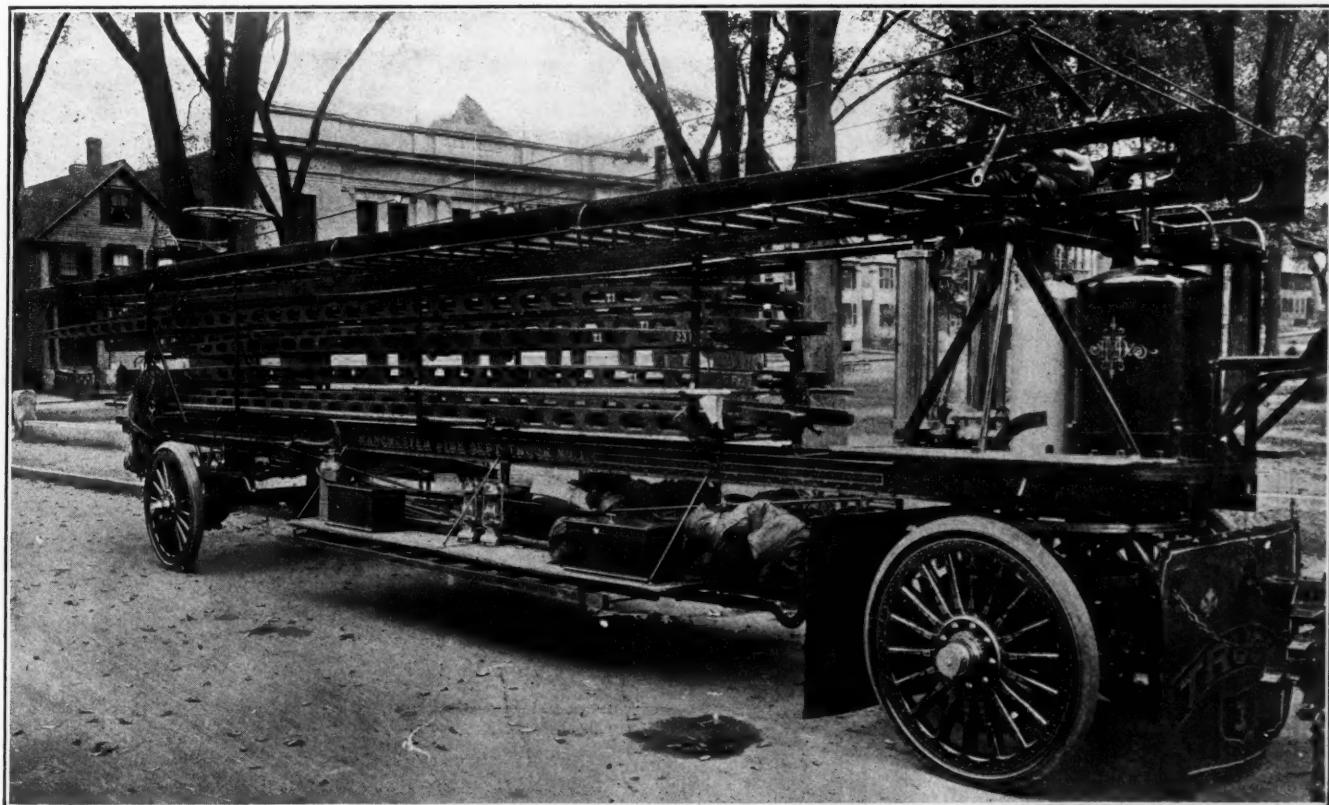
Manchester, N. H.—The disadvantages of a call department have forced the abandonment of the old-fashioned aerial ladder hoisting arrangement at Manchester, and the accompanying photograph shows the new pneumatic device with which this particular piece of fire-fighting apparatus is now equipped. The 85-foot extension ladder, formerly elevated by means of a Babcock screw hoist, is now made an easily controlled appliance by agency of a Dahill Pneumatic Hoist, so that where it was one time a matter of minutes before the ladder reached an angle of 45 degrees it can now be swung to this position in ten or twelve seconds, the entire operation being guided by a single man. The aerial truck, so-called, was built by the Fire Extinguisher Company and is probably the most peculiarly equipped truck of the kind in use in the country today, for, while similar designs of trucks in large cities might carry an equipment of 50, 60 and 35-foot ladders, and possibly a 25-foot ladder besides the main ladder, this one shown in the picture carries to a fire not only the extension ladder, but a 10, 14, 16, 23, 25, 30, 35, 50-foot ladders, two scaling ladders, one a 16 and the other a 14-footer, plaster hooks of various kinds, door openers, pitchforks, brooms, all kinds of rakes and other like appliances. The main ladder as shown in the picture was originally

36 inches lower down and, previous to its being made over, all the ladders mentioned were piled on top of the aerial ladder and had to be removed before it could be raised. As now arranged it is entirely unencumbered.

The truck as now fitted is perfectly modern and the equal of any truck of the type in use anywhere. The work of making it over was in charge of Kress & Son, of Lawrence, Mass., and took about three months. The hoist is carried upon the forward section and consists of two tanks and two lift cylinders and plungers. Air is compressed at the station by means of an ordinary motor-driven compressor, and at every filling the gauge on the larger and most forward tank is made to stand at 350 pounds. The second tank is filled with a special oil, called "zero oil" by the makers because of non-freezing properties. The presence of alcohol in the mixture can be detected from the odor of the exhaust after the ladder is raised. Air is admitted from the main tank into the secondary tank by means of proper valves, and it is usually found necessary to raise the pressure to about 225 pounds in lifting the ladder. The hoisting plungers work in heavy brass cylinders, pivoted at the base so as to follow the line of the ladder. An automatic valve is attached so that when the ladder reaches an angle of 45 degrees no further pressure can be transmitted to the liquid in the plunger cylinders. If desired, then it can be raised higher by opening a by-pass valve. With one filling of the main tank eight lifts to full height can be made and a correspondingly larger number of short lifts.

At the same time the truck was fitted with the automatic hoist, rubber tires were fitted as was a band brake operating upon the front wheels. This last was a necessary arrangement because of the fact that the apparatus is steered from the rear wheels. At this time also the old style single-bar ladders were replaced by truss ladders, which are not only lighter but more convenient to handle. Whereas now four good men can easily swing the fifty-foot ladder into place and two have thrown up the thirty-five footer, it used to take as many more with the older type.

The truck as it now stands is 65 feet long, from the end of the poles to the end of the extension ladder; is 26 feet between hubs and weighs, with driver and tillerman, about 11,000 pounds.



AERIAL TRUCK OF FIRE DEPARTMENT AT MANCHESTER, N. H.

New Patrol Wagon in Commission.

Richmond, Va.—The Pope Manufacturing Company, of Hartford, Conn., shipped to the city of Richmond a handsome some combination police patrol and ambulance. Richmond has the distinction of being one of the first of the Southern cities to motorize its Police Department. The car, a 50 horse-power Pope-Hartford, painted a dark blue, with its upper panel in azure, is one of the handsomest and most perfectly appointed wagons ever seen in the



Courtesy Hartford Daily Times.

PATROL WAGON FOR CITY OF RICHMOND, VA.

city. The body of the car is slightly wider and higher than the Pope-Hartfords used by the Hartford Police Department, and also has wire grating in place of the solid sides. Another new feature is the door at the rear. The seats, which run lengthwise of the car, are so arranged that they may be let down and the wagon converted into an emergency ambulance. The front of the body back of the driver's seat is armored with a special steel plate one-quarter inch thick for protection.

Favors Engine Tractor to Replace Horses.

Tacoma, Wash.—Firmly convinced that the horses of the Fire Department, which draw engines, should give way to the new two-wheeled gasoline engine tractors, Commissioner of Public Safety A. U. Mills has returned to Tacoma after a month's visit through many of the larger Eastern cities. Mr. Mills attended the annual convention of the League of American Municipalities in Buffalo and he obtained the naming of Tacoma as the convention city in 1915. Regarding the two-wheeled, 60 horse-power tractors, which can be attached to any horse-drawn fire engine, Mr. Mills said they were a great success. "I would like to order one tractor for a trial, and then if it is adaptable to our needs I want to replace every horse in the department hauling fire engines with them," said the Commissioner.

Standard Oil Company Demonstrates Sprinkler.

Port Jervis, N. Y.—A successful demonstration of the new automobile road oil sprinkler of the Standard Oil Company was recently given on Hammond street, between Sussex and Fowler streets. The test of the new applicer of oil was witnessed by Mayor W. H. Nearpass, Aldermen Raymond G. Schauer, A. T. Brown, Emmet A. Brown and Charles W. Bishop, Superintendent of Streets and Sewers; E. B. Durfey and a large number of interested citizens. The demonstration was in charge of Mr. L. R. Cross, of Middletown, Field Manager of this district; Chauffeur Roman and Mr. Stenger, chief of oil distributing. This machine applies the oil so cheaply that cities and towns which have heretofore been paying high prices

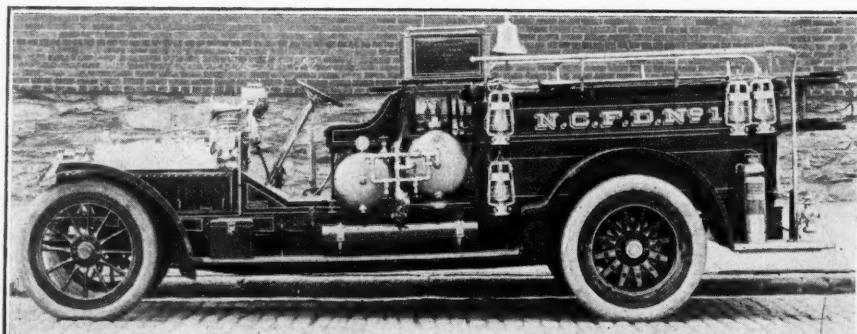
for oiling the streets will be able to cover five times the road space as before and at the same price. The prices which various municipalities have been paying for oiling has varied from four cents a square yard to twelve cents per square yard. The price in Port Jervis was about six cents per square yard which included sweeping and rolling. The cost which the Standard Oil Company will charge for the oil, the use of the automobile machine and the labor in applying it will be $1\frac{1}{2}$ cents per square yard. This, stated Mr. Cross, who gave the demonstration, will be the maximum price and it may be as low as $1\frac{1}{4}$ cents per square yard. This with the price of sweeping the road preceding the oiling will make the cost in Port Jervis next year about $1\frac{3}{4}$ cents per square yard. It means that Port Jervis will be able to do a greater amount of oiling at less money. Not only does the oiling by machine cost less but the work can be done faster. The new machine oils a space six feet wide uniformly and without puddles. An air pressure of 60 pounds forces the oil into the road to a great extent and there will not be as much carried off on the wheels of vehicles. The road sprinkler was designed by the Standard Oil Company and is built by the Hewitt Company, of Springfield, Mass. One of the machines was exhibited at the State Fair at Syracuse, N. Y., this summer, and brought forth much favorable comment.

Auto Steamer Stuck in Sand Road.

Racine, Wis.—While demonstrating its ability to negotiate the worst kind of roads, the auto fire steamer, sent to Racine by the Nott Fire Engine Co., for a test, sunk to the hubs in the sand which forms the roadbed on North Michigan street, and became stuck so fast that it was impossible to extricate it in time to hold the test scheduled for 2 o'clock in the afternoon. The fire steamer became stuck early in the morning, and men employed by the fire department, with the fire teams, worked all day in the efforts to extricate it. Every effort was made to pull it out of the sand by 2 o'clock in the afternoon, as it was realized that otherwise hundreds of people gathered to see the steamer develop pressure and throw a stream, would be disappointed. Boards were put under the wheels, but the heavy engine, weighing several tons, only broke through them. Many people gathered to watch the fire teams try to pull the big machine out of the road. North Michigan street was suggested as the thoroughfare on which to test the road qualities of the machine at the suggestion of Mayor Goodland. The mayor had become stuck twice on the street with his auto and considered that if the fire steamer could negotiate the sand it would be able to plow its way through any street in the city. The engine was finally extricated at 3 o'clock and the test was held.

Citizen Gives Fire Apparatus to Department.

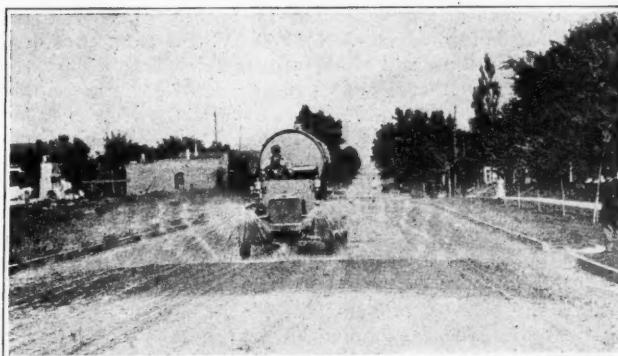
New Canaan, Conn.—The new piece of fire-fighting apparatus purchased and presented to the New Canaan Fire Department by Mr. W. H. Mulliken, a public spirited citizen of New Canaan, Conn., is shown in the illustration. The apparatus, which was purchased from the James Boyd & Brother Company of Philadelphia, is mounted on a Locomobile special chassis and the equipment consists of two Boyd Kanawha "air pressure" chemical fire tanks with hose body and the usual equipment of ladders, lanterns, etc.



APPARATUS PRESENTED BY W. H. MULLIKEN TO NEW CANAAN FIRE DEPARTMENT.

Denver's New Auto Sprinkler.

Denver, Colo.—The illustration shown here represents the six and a half ton Saurer Auto Sprinkler, recently purchased by the city of Denver. The sprinkler is shown in operation, spreading water from curb to curb across one of the widest streets in the city. The same engine that operates the truck while in transit also works the pump for distributing the water, and the sprinkling attachment is so designed that it automatically distributes the water at the rate of a gallon for each forty-five square



USING SAURER SPRINKLER ON DENVER STREET.

feet of roadway. The tank has a capacity of 1,400 gallons, and can be filled in about two and a half minutes. The truck has a speed of eleven miles per hour when the tank is fully loaded. The water is distributed from the tank in the direct ratio at which the truck is speeded; in other words, it pumps out ten times as much water going ten miles an hour as it does when being operated only one mile an hour. The apparatus is as near automatic as it is possible to make it, and one operator can operate the truck and regulate the distribution of the water. This truck will readily replace eight or ten of the ordinary horse-drawn sprinklers. Denver and St. Louis are the only cities in America to adopt the latest system and most economical method of sprinkling its streets.

Kissel Fire Fighters Reduce Fire Loss.

Kankakee, Ill.—Chief M. S. Baker, of the fire department, reports that the last fifty-seven fires in that city have aggregated a loss of only \$2,500. He attributes this to the efficiency of the Kissel Kar combination hose and chemical truck in the city's service, saying, "The secret of fire fighting is to get to the spot in the least possible time and the Kissel Kar fills this aim in every respect."

New Alco Police Patrol Is Ordered.

Schenectady, N. Y.—A new Alco police patrol motor truck has been ordered by the city from the American Locomotive Company, and it is expected that the truck will be delivered within six or seven weeks. The truck will be a four cylinder, 40 horse power vehicle. It will carry a fire extinguisher, stretcher and will be capable of seating about ten persons. Patrolman Peter Engle will drive the new patrol and several of the other patrolmen will also be taught how to operate the machine. The horses now owned by the city will be sold as were the other horses which formerly drew the fire wagons, which were displaced by the auto apparatus in the central fire station.

Adoption of Municipal Motors in Scotland.

Glasgow, Scotland.—The Corporation of Glasgow is extending still further the use of motors for city work. Quite recently a motor street sweeper was acquired, and this has been found to accomplish more work than several of the horse-drawn sweepers which have been used hitherto. Recently two motor-driven lawn mowers were tried on the corporation golf course at Bellahouston, in competition with a modern horse-drawn machine. The results were such that it is expected that a number of motor mowers will be ordered by the Parks Department. The Cleansing Department has arranged to introduce motor vehicles for watering and cleaning the streets. A new motor fire en-

gine has been adopted at Paisley. It has a six-cylinder engine with four forward speeds and one reverse. It can develop 70 to 75 horse-power, can give a road speed up to forty miles an hour and can ascend gradients of one in five fully loaded. The engine has been tested in competition with an old machine and the results are regarded as satisfactory.

Yellow Adopted for Color of City Autos.

Los Angeles, Cal.—Yellow is to be the official color of the city-owned automobiles. Council so decided after a strenuous effort by Councilman Andrews and several others to have the color changed to "battleship gray." The contestants against the adoption of the yellow color scheme maintained that the gray was not so conspicuous as yellow. This argument proved the undoing of the proponents of the "battleship gray," as it was shown that the easily identified yellow cars would of themselves put an end to unofficial tours by city officials and make impossible joy-riding of any kind.

Fire Apparatus Exceeds Requirements.

San Francisco, Cal.—Three new combination motor-driven pieces of fire apparatus and a tractor for changing horse-driven apparatus to motor-driven were tried out for five hours over the steepest hills in San Francisco in tests for speed and endurance, with the result that the fire commission will purchase them and have them installed immediately. The tests were conducted by Chief Engineer of the Fire Department Thomas F. Murphy and Superintendent of Engines Samuel Birmingham. Chairman Henry U. Brandenstein, William H. Hammer and Eugene E. Pfaeffle of the fire commission went along to witness the tests. In every respect the apparatus exceeded the requirements. Two combination chemical and hose motor-driven trucks, required to run for 25 miles continuously, did better than 30 miles and could have gone farther. They ran up hill from Ellis and Market on Stockton to Pine street. This steep hill had to be climbed at the rate of 10 miles an hour. The trucks made over fifteen miles an hour. The endurance runs were made on the Highway from the south drive to Sloat boulevard. The combination pumping and hose wagon was tried for speed and pumping. It pumped 600 gallons a minute from the 47th avenue and Jay street cistern in the Sunset district. The wagon pumps about the same amount as an ordinary steam engine, but is very fast, and is designed for quick runs to outlying districts.

GOVERNMENT AND FINANCE

Can Save \$25,000 by Prompt Payment.

Baltimore, Md.—Estimating that the city can save \$25,000 a year by the abolition of the system of paying all departmental bills on one specific day each month, Deputy Comptroller Childs has formulated a plan for the payment of all bills within one or two days after they are presented. The aim of the Childs plan, which will be submitted to the Board of Estimates, is to enable the city to derive the benefit of the 2 per cent. discount offered by many merchants for the payment of bills within ten days.

City Charter Again Rejected.

Waterville, Me.—For the second time in two years the citizens rejected the charter and voted down the city charter form of government, this time by an overwhelming majority. The result of the special election was: Yes, 404; no, 865. The "yes" vote was cut down almost one-half from one year ago, the result of which election was: Yes, 763; no, 919.

STREET CLEANING AND REFUSE DISPOSAL

Health Boards Stop Sweeping of Streets.

Richmond, Ind.—Answering his critics who have complained in City Council meetings that the paved streets are not well cleaned by the use of shovels, Street Commissioner Genn states that he was forced to abandon sweeping the streets with brushes by the city and county Boards of

Health. He favors the use of rattan brushes, claiming that more effective work can be done. However, the brushes which he purchased when the Zimmerman administration came into power the last time were used but eleven days when the secretaries of the city and county Health Boards ordered their use stopped. The complaint was made to health authorities by grocers and other merchants on Main street, who asserted the brushes raised too much dust. The use of the power street sweeper is forbidden by a rule of the State Board of Health.

Secure New Street Flusher.

Bridgeport, Conn.—Superintendent of Street Cleaning A. J. Bodine has secured a new Studebaker street flushing machine for use on the paved thoroughfares without any cost to the city and it has been used in East Washington avenue with great success. By his suggestion, the Board of Contract and Supply effected an exchange of the flushing machine secured under the previous administration, and which proved defective, for a new one, and in this manner an efficient machine was secured at no cost. With the new machine three-quarters of the pressure obtained at the hydrants is available.

May Erect Incinerating Plant.

Haverhill, Mass.—The Municipal Engineering Corporation of New York has a plan for taking care of the city's garbage and sewage by incineration, and the Council has referred a proposition of this nature to Alderman Hood, who has had it in mind for some time. The engineers propose to erect burners of sufficient capacity to take care of all garbage and sewage, destroying it, and charging the city on a per capita basis. The figures have not been submitted, depending upon the haul which would be necessary as well as other details which the city could supply, but they are willing to send their experts in to talk the matter over with the city officials if the plan is thought to be a good one.

Water Company Donates Water.

Oak Park, Cal.—The Oak Park Water Company officials have addressed a letter to the City Commissioners offering to donate water for street sprinkling purposes in Oak Park until November 1. This action was taken by the board of directors when it was learned that the city had no funds to pay for sprinkling done in the annexed district and that the business men and citizens were subscribing to a fund to pay for a team and man to drive the sprinkling wagon one-half day twice a week. Local residents will subscribe about 25 cents a week to have the sprinkling wagon pass their homes and places of business.

RAPID TRANSIT

"Subway Day," October 26.

Brooklyn, N. Y.—Chairman Willcox, of the public service commission, has announced that in view of the requests of the civic organizations of the Bay Ridge section of Brooklyn, the commission will have a formal commencement of work on the two additional sections of the Fourth avenue subway running from 40th street to the vicinity of 86th street. The contractor, The Degnon Contracting Company, has indicated its readiness to commence work and, accordingly, Saturday, October 26, has been decided upon as the date. The place which has been chosen is on the westerly side of Fourth avenue, between Bay Ridge avenue and 68th street, where a grand stand will be erected to accommodate the guests of the Commission. The civic associations are planning to have a parade preceding the commencement of work, to be followed by a luncheon at the Ridge Club.

P.-A.-Y.-E. Cars to Supersede Single Truck.

Syracuse, N. Y.—By the middle of December, or the first of January at the latest, the single-truck Geddes cars of the Solvay line will be put out of service and replaced by new P.-A.-Y.-E. cars. This statement was made by General Manager Benjamin E. Tilton of the Syracuse Rapid Transit Company when the complaint of West End citizens against the single-truck cars was called to his atten-

tion. The eight small cars, when abolished from the Solvay line, will be used only for rush-hour traffic, Mr. Tilton explained. In their place will be nine of the P.-A.-Y.-E. type. A tenth car now being manufactured in St. Louis for the Rapid Transit Company is the middle-entrance car, which is to be operated in Salina street as an experiment. For several months the West End Citizens Improvement Association, the jurisdiction of which embraces the Ninth and Tenth Wards, has been representing public sentiment in an agitation against the single-truck cars. The derailment of one of the cars, resulting in the injury of several passengers, has greatly increased the demand for better service. Joseph W. Dawson, president of the association, said that frequent derailments proved the small cars a menace, and the demand for their abolition would be continued, if necessary. He added, however, he believed relief was in sight, the Rapid Transit Company having promised new rolling stock for the line.

Wants City to Carry Insurance.

Minneapolis, Minn.—Alderman John Peterson has introduced in the Common Council a resolution which provides that the city carry the fire risks on all public buildings. Mr. Peterson reports that in the last ten years the city has paid \$100,000 in insurance premiums and has sustained fire losses aggregating \$45,000.

MISCELLANEOUS

To Remove Slot Machines.

Evansville, Ind.—Prosecuting Attorney J. W. Sappenfield has announced that all slot machines must be removed from the city or prosecutions will follow. There are about three hundred so-called "gum" machines in the city and they pay checks worth 5 cents each at the bars. The Grand Jury has been investigating the matter and Prosecutor Sappenfield has obtained an appropriation to aid him in cleaning up the city. He says "the present police force is nothing but a dummy" and that the officers have been inactive in helping him enforce the laws.

Publicity as an Aid for Cities.

New York, N. Y.—A new agency, which aims at the betterment of municipal government in American cities, has been established here. It takes the form of a new department of surveys and exhibits of the Russell Sage Foundation. Cities all over the country have begun to realize the commercial and advertising value of good city government and have asked outside help in studying their local problems and prescribing remedies. To meet this demand the Sage Foundation has organized this department, which will assist communities in applying scientific methods and effective publicity toward city betterment.

Concrete Sea Wall Barrier to Floods.

Pittsburg, Pa.—The great concrete sea wall, which will surround the downtown section of Pittsburg and keep out the floods which visit the city each year is now in the hands of the people. An item of \$900,000, to cover the cost, is in the bond issue to be voted on in November. The wall will be almost two miles in length and is designed to keep out floods to the height of 32 feet, a height seldom reached. The Pittsburg Flood Commission, the Industrial Development Commission and the Chamber of Commerce, as well as other civic bodies, are fighting hard for the wall. Through the courtesy of President Enoch Rauh, of the Pittsburg Association of Credit Men, Vice President A. J. Kelly, Jr., of the Flood Commission, addressed the Credit men at their weekly luncheon in the Fort Pitt Hotel on October 3. He told of the great advantages of such a wall, stating that it would reduce disease, force the valuation of property in the low lying district up from 25 to 50 per cent., cause better buildings to go up, give wharf terminals not now in existence, and cause Pittsburg to be the first city along the Ohio or Mississippi rivers to take advantage of the business which will come to these towns through the opening of the Panama Canal.

Woman Made Commissioner.

Los Angeles, Calif.—Mrs. David Chambers McCan, a prominent Los Angeles society, club woman and civic worker, has accepted appointment at the hands of Mayor Alexander as a member of the Civil Service Commission. Mrs. McCan is the first woman civil service commissioner in the United States.

Epidemic of Glanders.

Norfolk, Va.—An epidemic of glanders among horses has broken out in Norfolk in such serious proportions that the Board of Control has ordered the water turned off from all public horse troughs to prevent the spread of the disease, which is incurable and one of the most infectious diseases among horses and mules. Coincident with the board's order shutting off water an order was issued requiring that spigots be connected with the water troughs so that teamsters may water their horses from their own buckets. Dr. H. N. Holmes, a well-known veterinarian in Norfolk, recommends that the troughs be kept dry for at least two years in order that the disease may be stamped out.

Spend Millions for Amusements.

Kansas City, Mo.—That Kansas City spends more than \$6,000,000 a year for its recreation was disclosed at the regular weekly conference of the board of public welfare. F. F. McClure, superintendent of the recreation department, led the discussion to what extent and how hard a city plays. The sums spent in amusement were attained by a conservative and thorough compilation of the statistics from all the places of amusement in Kansas City. These include theatres, motion picture shows, dance halls, baseball parks, river excursions, boats and practically every form of commercial recreation. The annual attendance at these places where the Kansas City spends her spare moments is placed at a figure above 41,000,000.

City Market Plan for Santa Monica.

Santa Monica, Cal.—The first municipal market day in Santa Monica was held last week. For the present they will be curbstone markets, but if demand justifies buildings are to be erected. The plan is meeting with popular approval and officials believe that the large crowd of buyers will attend to obtain their produce direct from the grower or peddler. Three days a week have been set aside for the use of market places.

Cleveland Considers Municipal Telephones.

Cleveland, O.—Municipal ownership and operation of a telephone system is contemplated in a resolution adopted unanimously by city council. It calls upon Mayor Baker and Director of Public Service Springborn to investigate the question of public ownership and operation of one or both of the local telephone systems.

It is held that the city under the "home rule" provision of amendments to the state constitution recently adopted is empowered to own and operate a telephone system, and that it could get one or both of the local properties by purchase at an agreed price or through condemnation proceedings.

Educate People to Beautify Lawns.

St. Paul, Minn.—The Women's Civic League has started a campaign to educate the people of St. Paul to beautify their lawns and home surroundings as far as is possible. At a meeting of the executive board at the Y. W. C. A. the following resolution and recommendations were passed. "We heartily indorse and commend the movement started in some localities to replace highboard fences with wire. This of itself invites landscape gardening as it gives vista to the locality, sunshine and air to the shrubs and makes possible the converting of alleys into inviting lanes. If expert advice cannot be afforded there is much that can be learned from the ordinary catalogues on how best to lay out the yard. The florists' catalogue department of our local firms offer advice gratis. In planting always keep your center free, massing around the borders of your yard and against the buildings. Avoid straight lines. Plant vines and high shrubs on the outside for privacy; place in front the lower shrubs, then the peren-

nials and in the immediate foreground annuals may be sown. Keep all grass cut away from the shrub bed as the ground needs frequent loosening and fertilizing. In every instance, plant for a harmonious color scheme and continuous bloom. Although spring is the logical season for planting, much can be done in the fall. The woods furnish without expense the elder, sumac, englemanni, wild grape vine, dogwood, honeysuckle vine and bittersweet, all of which can be planted now. Then there is the lilac, snowball, spirea, Rosa Rugosa, barberry and hydrangea, all hardy enough for fall planting. Now is the time for planting tulips. One may mingle with flowering shrubs, currants, gooseberries, raspberries, rhubarb and horseradish with good effect and profit."

City Builds Japanese Garden.

Fort Worth, Tex.—B. G. Leake, member of the City Beautiful Commission, recently created by the Texas Architects' Association, has tendered his services to the local Park Department in the matter of transforming the new City Park into a Japanese garden. Mr. Leake has considerable data on hand regarding the construction of Japanese gardens and his offer was accepted thankfully by Park Superintendent George E. Vinnedge. It has been suggested that the new "breathing spot" be called Grant Park, in honor of the secretary of the Park Board. It is believed that this name will be accepted by the board. Mr. Leake, who is a prominent local architect, and Park Superintendent Vinnedge will accompany the Park Board on a trip to all city parks for the purpose of laying plans to further the city beautiful movement.

Plan Utilizing Middle Ground for Docks.

Jacksonville, Fla.—The proposition of utilizing what is known as middle ground for terminals has recently been the subject of considerable discussion in connection with the proposed ownership, by the city, of docks and terminals adequate to the needs of the port. Nothing definite can be done until the passage by the legislature of the enabling bill conferring upon the city of Jacksonville the right to acquire and improve property for this purpose and permitting the issuance of bonds to the amount of \$1,500,000, or so much thereof as may be necessary, for its purchase and development. When this law is enacted it will be submitted to the people for ratification and at the same time fifteen port commissioners will be elected. These port commissioners will have control of the expenditure of the bond money and it will be their duty entirely to select such site or sites for terminals, as may, in their opinion, better serve the interests of the city.

Old Glory Pleads for Shade Trees.

Alameda, Cal.—Old Glory flies from every tree on Liberty avenue, Alameda. The 120 flags are a mute appeal to the City Council to spare the axe. Members of sixty families in the new residence thoroughfare have signed a memorial to the Council praying that the trees be allowed to stand. The Council committee is viewing the avenue that a report may be made on the petition at the next meeting. When the members of the committee appeared at the head of the avenue junction with High street the street presented a holiday scene. Under the green foliage of every tree the tri-colors fluttered a welcome to the city fathers. The trees are of the acacia variety and have been in the avenue, extending from High street to Fernside boulevard, for twenty years. A year ago the first lot in Liberty avenue was sold and now every piece of ground on both sides of the tree shaded street is occupied with a home. Although the avenue has been open for more than twenty years, the city engineer discovered only recently that the curbing survey was wrong. The engineer said it must be moved inward toward the lots three inches on each side, and as the trees would prevent this the order to cut down the trees was issued. There is not a home in Liberty avenue but whose owner was induced to buy, partly, because of the splendid tree decoration of the street. So a unanimous protest was lodged with the Council and Old Glory is wrapping her folds about the giant trunks to influence a verdict of "let the trees stand."

LEGAL NEWS

A Summary and Notes of Recent Decisions—
Rulings of Interest to Municipalities

Claims—Priority—Bonds.

In re Manistee Watch Co.—Where a city issued bonds, and a committee appointed to disburse the funds to be derived therefrom turned over bonds to a corporation establishing a factory in the city, and mortgaging its property to the city, and the committee was financially responsible, the city, on the bankruptcy of the corporation, could not claim priority on the theory that it was in the position of a *cestui que trust* whose trustees had wrongfully converted its funds.—United States District Court, 197 F. R., 454.

Change of Grade of Street—Statutory and Common Law.

Friel et al vs. City of New York.—Where the city of New York, without taking any steps to change the legal grade of a street, but acting on the authority of a void ordinance of the former common council of the city of Brooklyn, changed the physical grade of a street, it was liable for damages to abutting property which has been improved with relation to a former lawfully established grade. Where the grade of a street has been changed by lawful authority, there is no common-law liability for consequential damages therefrom.—New York Supreme Court, 134 N. Y. S., 1025.

Filling in Tide Lands—Adverse Possession.

City of Santa Cruz vs. Southern Pac. R. Co. et al.—It not being shown that the filling in of earth under a wharf on the tidelands at Santa Cruz is not an appropriate method of strengthening the structure, or that it prevents the use of the beach for other purposes more than is necessary for the purposes of navigation, the city of Santa Cruz, the extent of the right and power of which, under act granting such lands to it subject to the right of navigation, is to prevent an unnecessary purpresture on public use of the beach for pleasure grounds, may not interfere with such improvement. Land of a city between a street and tide line, being proprietary land not dedicated to public use, is subject to the ordinary rules concerning title by prescription.—Supreme Court of California. 126 P. R., 362.

De Facto Officers.

Oakland Paving Co. vs. Donovan.—Finding a person in charge of a public office and transacting its business in a regular way, under an assumption of right to act as the officer charged with the duties of such office, third parties are not bound to ascertain his authority so to act, but as to them the courts will hold him to be an officer *de facto*, and will not permit his title to be collaterally assailed.—District Court of Appeal, California. 126 P. R., 388.

Contract for Street Improvement—Validity.

H. S. Turner Inv. Co. vs. City of Seattle.—A contract between a city and owners of land within a larger improvement district for the widening and extension of a street, which recites that the owners will take as a nominal sum damages for the property taken and damages caused by change of grade of the streets, and that they will remove the earth necessary to grade the streets, and that their property shall be eliminated from any assessment for the improvement, is *ultra vires* and invalid.—Supreme Court of Washington, 126 P. R., 426.

Injuries to Pedestrians—Negligence.

Connolly vs. City of Spokane.—Where trapdoors, maintained in a sidewalk where pedestrians were continually passing, were not in good repair, and a pedestrian sustaining a personal injury could not state what occurred when he stepped on one of the doors, but that either the door sank down with his weight, or some one beneath, without warning, raised the other door, which caught him and caused the injury, the city, in either event, was liable.—Supreme Court of Washington, 126 P. R., 408.

Livery Stables—Ordinances—Validity.

Douglas vs. City Council of Greenville.—A proper ordinance restricting location of livery stables is not invalid as to one who had bought a lot and commenced building operations at considerable expense before the ordinance was adopted—Supreme Court of South Carolina. 75 S. E. R., 687.

Bill Boards—Ordinances—Reasonableness.

Standard Bill Posting Co. vs. City of Newburgh et al.—The provision in an ordinance regulating the erection of bill boards in a city that no bill board more than five feet in height shall be erected without permission of the Common Council is valid, because it does not absolutely prohibit the erection of bill boards more than five feet high, but leaves the matter to the judgment of the city authorities. The Council of a city has no authority to declare a structure a nuisance unless it is such in fact, and an ordinance declaring that bill boards not constructed of metal shall be a nuisance is invalid, for the question of nuisance depends on the facts of each case.—New York Supreme Court, 137 N. Y. S., 188.

Change of Street Grade—Damages.

Hicks vs. City of Williamsport.—Where work is done by a street commissioner without authority of a city ordinance, it is not a legal change of grade which will confer on an abutting owner the right to damages.—Supreme Court of Pennsylvania, 84 A. R., 435.

Injury to Pedestrians—Private Street.

Grant et al vs. Dickson City Borough.—In an action against a borough for injuries caused by falling through a bridge built by a land company and located on a street on its plan of lots, a nonsuit is proper, where no acceptance of the street by the borough is shown. The mere fact that work had been done on a street, not accepted by the borough, by the Street Commissioner, before the accident thereon, is immaterial, where it was not shown that his action was with the knowledge of the Borough Council, or that it had been ratified.—Supreme Court of Pennsylvania, 84 A. R., 454.

Shows—Licenses—Refusal.

People ex rel. Moses vs. Gaynor.—Under Code of Ordinances of New York City, which require common shows, etc., to be licensed, and which provide that licenses shall be issued by the Mayor, the granting of such license is discretionary, and not mandatory. The Mayor of New York City did not abuse his discretion in refusing to grant a license to maintain a moving picture show immediately adjoining a public school and opposite the parish house and other buildings of a church.—New York Supreme Court, 137 N. Y. S., 196.

Defective Streets—Statutes.

Aldrich vs. City of Boston.—Act June 22, 1799, providing that no platform of cellar door or step in any street in Boston shall project into the street more than three feet, that all cellar doors subsequently made shall not project from the line of the house more than six inches, and that, if any owner of any platform of cellar door or steps shall neglect to remove the same within five days after notice, he shall forfeit a specified sum, permits a platform covering the entrance to a cellar, and the platform may be projected into the street, and permits steps leading to cellars, as well as those ascending from a street, and an owner maintaining a platform and steps within the limit of the statute is not liable for injuries sustained by a pedestrian thereon, in the absence of any notice of the removal thereof.—Supreme Judicial Court of Massachusetts, 99 N. E. R., 329.

Sewer Assessment Bonds.

Nolan vs. City of Reading.—Where a city had issued bonds reciting that they were secured solely by sewer assessments levied under a specified ordinance, and that the city was only liable for the amount collected on such assessments, the city's negligent failure to make an adequate assessment to provide for the whole of the bond issue rendered it liable to any bondholder whose bond had not been paid by reason of the inadequate assessment.—Supreme Court of Pennsylvania, 84 A. R., 390.

NEWS OF THE SOCIETIES

Calendar of Meetings.

November 12-15. AMERICAN SOCIETY OF MUNICIPAL IMPROVEMENTS.—Annual Convention, Dallas, Tex.—A. Prescott Folwell, Secretary, 50 Union Square, New York.

November 20-21. SOUTHERN APPALACHIAN GOOD ROADS ASSOCIATION.—Fourth Annual Convention, Atlanta, Ga.—Cyrus Kehr, Vice-President, Knoxville, Tenn.

November 19-22. AMERICAN CIVIC ASSOCIATION.—Annual Convention, Baltimore, Md.—Richard B. Watrous, Secretary, Union Trust Building, Washington, D. C.

December 3-6. AMERICAN ROAD BUILDERS' ASSOCIATION.—Ninth Annual Convention, Music Hall, Cincinnati, O.—E. L. Powers, Secretary, 150 Nassau street, New York City.

December 12-18. NATIONAL ASSOCIATION OF CEMENT USERS.—Annual Convention, Pittsburgh, Pa.—R. L. Humphrey, President, Harrison Building, Philadelphia, Pa.

December. FIRE EXPOSITION AND INTERNATIONAL CONFERENCE OF FIRE PREVENTION, PROTECTION AND EXTINGUISHMENT.—Madison Square Garden, New York City.—A. D. V. Storey, Secretary, 1269 Broadway, New York, N. Y.

American Road Builders' Association.

An official announcement regarding the Third American Good Roads Congress and the ninth annual convention of the American Road Builders' Association, to be held in the Music Hall, Cincinnati, O., Dec. 3 to 6, has been issued by Secretary E. L. Powers, 150 Nassau street, New York City.

The program will cover the practical questions relating to highway work, including the design of complete highway systems for cities, counties and states; detail plans for construction; the selection of materials for foundations and wearing surfaces; plant equipment for the construction of roads and pavements; problems of maintenance; cost data both for construction and repairs; the difficulties which confront the contractor on highway work; the development of courses of instruction in highway engineering in our technical schools and universities; the importance of research and experimental work; and other subjects directly related to the building and maintenance of good highways. Each of these subjects will be treated by experts in brief papers, leaving time for discussion from the floor.

One of the sessions will be devoted to the business of the American Road Builders' Association. The citizens of Cincinnati are noted for their hospitality to strangers and the delegates are sure of receiving suitable entertainment.

There will, as usual, be an exhibition of everything in the line of road building and street paving machinery, materials and appliances, which will include road rollers, traction engines, paving plants, dump wagons, rock crushers, culverts, and such materials as bitumens, cement, brick, wood block, etc. In addition to the exhibits of the manufacturers, each state and a

number of the principal cities will be assigned spaces in which to illustrate and describe their road systems, kind and extent of pavements, and materials used. Responses have already been received from a number of the states and cities.

American Civic Association.

Invitations to the eighth annual convention of the American Civic Association, to be held in Baltimore at the Belvedere Hotel, Nov. 19, 20 and 21, have been sent out from the headquarters of the association in the Union Trust Building in Washington. The invitations are signed by J. Horace McFarland, president, and Richard B. Watrous, secretary of the association, and set forth, in part:

"The program, now well under way, promises sessions rich in addresses and discussions relating to national, state and city parks; to city planning, with particular reference to the needs of the small cities and towns; to the intimate details of town and village improvement; to the billboard nuisance, and to the house fly problem. Distinct advances in these various departments of work will be recorded in the convention in addresses by well-known civic leaders. Provision is being made for round-table conferences, where may be discussed freely and to great profit the many problems that arise in the making of the right kind of community life."

National Firemen's Association.

The annual convention was held at Springfield, Ill., Sept. 24. Among the topics and papers discussed were the following:

"My Ideas of General Pension and Relief Law That Would Best Serve the Purpose of Each State for the Benefit of Firemen and the Protection of Their Dependents," Chief Hugo Delfs, Lansing, Mich.; "Attacking a Spreading Fire in Frame Building District, Large Lumber Yard, Large Basement or Cellar," Michael Corrigan, battalion chief, Chicago; general discussion on national incorporation of association and benefits to be derived therefrom, led by Battalion Chief Bert Fisher, Chicago; "Delegates, Their Duty While at Convention and to Those They Represent," Otto Sorgenfrei, Blue Island, Ill., "Should Not the Firemen of the United States Take Advantage of the National Firemen's Association and Create Through Its Organization an Insurance Beneficiary Organization for Their Protection," Captain James Crapo, Engine Company 19, Chicago; "Some Ideas and Methods of Inspection for the Prevention of Fire," Fourth Assistant Fire Marshal John C. McDonnell, Chicago; "Benefits of Inspection of Buildings and Other Conditions by the Fire Department as Added Means of Fire Prevention," Charles Swingley, St. Louis,

Mo.; "The Best Style of Motor Apparatus Adaptable for Medium and Small Size Cities," Chief W. P. Weeks, Battle Creek, Mich.; "Protection of Firemen in America as Compared with Great Britain, and Giving a Suggestion for a Plan for Our Adoption," by a past-delegate to the International Firemen's congress, London, England, B. F. Staymates of Clinton, and T. E. Smith of Akron, O.; "Is the Efficiency of the Fire Departments of the Country Keeping Pace With Increased Risks, Especially in Cities Which Are Fast Outgrowing Their Present Water Works System? If Not, Suggest Most Suitable Apparatus to Effect Results," Chief Charles Slempe, Anadarko, Okla.; "Are Not Firemen the Poorest Paid Employees of the Municipality, Duties Considered?" Dennis Ryan, Engine Company 113, Chicago.

The officers who were chosen to serve another year are: President, Thomas R. Johnstone, Chicago; vice-president, Otto Sorgenfrei, Blue Island, Ill.; treasurer, Charles Slempe, Anadarko, Okla.; secretary, Bert Fisher, Chicago; national organizer, H. McNally, Saginaw, Mich.; statistician, S. Kellerman, Jr., Edwardsville.

The following committee was appointed to provide plans for the organization of a fraternal insurance company to provide protection for firemen: C. C. Cohein, Bushnell, Ill.; B. F. Staymates, Clinton, Ill.; Chief Peabody, Albion, Mich.; Captain Hill, Los Angeles; Chief Hitchcock, Council Bluffs, Ia.; Chief Buell, Parsons, Kan., and Chief Kipley, Riverdale, Ill.

Ohio State Firemen's Association.

The eighth annual convention was held at Youngstown, Oct. 15-17. Following the call to order by President Knofflock, Mayor F. A. Hartenstein made the address of welcome. Among the papers and topics discussed were the following: "Educate for Fire Protection" by T. E. Smith, Akron; "Building Inspection" by George W. Adams, Mansfield; "Should a Standard Hose Thread Be Established by Law" by James Fitton, Bellaire; "Better Organization for Volunteer Departments" by J. H. Gosling, Ottawa; "Has Razing of Old Buildings Benefited the Fire Service" by G. W. Kniseley, New Philadelphia; "Drill and Discipline" by A. S. Aungst, East Liverpool.

The following officers were selected for the coming year: President, Geo. Knofflock, Mansfield; first vice-president, E. J. Lampson, Garrettsville; second vice-president, S. P. Pond, DeGraff; third vice-president, T. J. Gough, Conneaut; fourth vice-president, P. W. Morton, Columbus; secretary, D. K. Moser, Warren; treasurer, Fred Kniseley, East Liverpool. East Liverpool was the place selected for holding the 1913 convention.

A demonstration of the local fire apparatus was given by Chief Loller and the department. The recently received Robinson pumping engine was the chief attraction. A visit was made to the plant of the Republic Rubber Company.

Massachusetts State Firemen's Association.

The thirty-third annual convention of the association was held at Faneuil Hall, Boston, October 9-11. The convention was welcomed by Mayor Fitzgerald and the courtesies of the Boston department were extended by Deputy John Grady in the absence of Chief Mullen, who was ill. Regular business was transacted and several addresses followed. Fire Commissioner Cole described "An Outline of the Intended Scope of the Metropolitan Fire Hazard Commission." District Chief Fox spoke on "Carelessness, the Principal Cause of Fires, and Suggestions for Prevention." Walter L. Wedger, Boston, discussed "Some Explosives and Inflammable Substances Found in Our Cities."

The second day of the convention was given over to the witnessing of exhibitions by members of the Boston Fire Department. The first of these consisted in evolution of the fleet of fire boats, showing the practical efficiency of fire boat protection. In the afternoon a ladder drill at fire headquarters was given. The new 65-foot extension water tower was shown. This apparatus has connections for four lines, two for the tower itself and two for the deck gun carried in the rear. In the evening an alarm was sounded and a realistic exhibition of fire extinguishment given.

Among the papers read at the business sessions were the following: "Benefits to Be Derived from a State Firemen's Home" by Frank M. Baker, Oswego, N. Y.; "Bills Introduced in the Legislature of 1912 Affecting Firemen" by Capt. James F. McKissick, Lowell; "Resume of a Chief of Fire Department's Experiences in Fighting Fires" by George W. Horton, Baltimore, Md.; "The Metropolitan Aid System" by Chief John Mullen.

Officers were elected as follows: President, District Chief Henry A. Fox of Boston; vice-presidents, A. P. Gorman of Gloucester and E. Walsh of Springfield; secretary, D. Arthur Burt of Taunton; treasurer, H. R. Williamson of Worcester; directors for three years, George M. Wilson of Lynn, D. E. Carey of Lawrence and Edward F. Dahill of New Bedford. The secretary's report showed that there are 4,165 members, and that the finances are in good condition.

American Road Congress.

The following abstracts of papers are in addition to those already published:

In discussing French roads, M. de Pulligny, engineer in chief of Bridges and Highways of France, said in part:

France possesses a network of public highways as remarkable by reason of its vast extent as by the good condition of the roads as a whole. These highways are divided into seven classes:

- 1—National roads.
- 2—Departmental roads.
- 3—Main traffic roads.
- 4—Roads of common interest.

5—Ordinary local roads.

6—County roads, recognized and not recognized.

7—Streets.

The first two classes constitute the main roads (grande voirie), and the five others, the lesser road (petite voirie).

Under the present condition of things the departmental roads are gradually being absorbed into the main traffic roads and the roads of common interest, which, however, are controlled in about the same way with the exception only of certain proceedings.

Since the national roads are the property of the State, their classification is vested in the State, and, when they are declared to be of public utility by a decree of the Council of State, they are established and maintained at the expense of the federal treasury.

Dell M. Potter, vice-president of the Ocean-to-Ocean Highway Association, made the assertion that the "view the United States government has taken in the development of its highways systems has driven from 25,000 to 40,000 of its best citizens out of this country annually for the past five years, because the refusal to build good roads through the sections in which they have settled has made it impossible for even this intelligent class to make money."

He declared the prosperity of this country depends on the establishment of national highways, quoting statistics to prove that but half of the acreage of farm land of the country is uncultivated because of the paucity in proper road facilities. In his judgment, this country will never produce as it should until good highways are constructed.

The speaker outlined a plan for the proposed national highway, the route of which will traverse New York, New Jersey, Delaware, Maryland, Pennsylvania, West Virginia, Ohio, Illinois, Indiana, Missouri, Kansas, Colorado, New Mexico, Arizona and California, by which the federal government would take the roads already built under control and give the State in which these highways were located credit in a monetary way, which in turn would give the States money to improve its other highways.

He declared that this route had been selected because three-fourths of the wealth of the country lies along its direction, together with 40 per cent. of the population of this country. This, he said, would not only attract prosperity from travel but would give moneyed men of other States opportunity to see chances for investment and development overlooked by the residents of the particular State, which all would tend to increase the general prosperity of the country.

Municipal Government Association.

A municipal home rule conference was held at Utica, N. Y., September 21, under the auspices of the Municipal Government Association. The prin-

cipal address was delivered by J. Hampden Dougherty of New York, a director of the association. He explained that the object of the association is "to unite the cities of New York State in the battle for municipal freedom. Its immediate purpose is to crystallize home rule and procure from party conventions their explicit pledge that this cause shall be advanced whatever party is permitted to appear in the state government." The association, he stated, would endeavor to have the Republican State Convention and the Democratic State Convention each adopt a plan urging home rule for cities.

American Society of Engineer Draftsmen.

The annual meeting of the American Society of Engineer Draftsmen was recently held in New York City.

The various reports read showed that the society was in a flourishing condition and progressing finely. The feature of the meeting was the election of officers for 1913, Prof. Charles William Weick of Columbia University being unanimously elected president. Other officers elected were: William B. Harsel, first vice-president; Charles A. Clark, second vice-president; C. B. J. McManus, third vice-president; L. T. Maenner, fourth vice-president; E. F. Chandler, Henry R. Sloane and C. W. Fleming to the board of directors.

Society of Municipal Engineers of Philadelphia.

With a charter membership of 250 engineers of the various departments of the city government, the Society of Municipal Engineers of Philadelphia held a meeting Oct. 15 in the mayor's office and adopted a constitution.

Addresses were made by Mayor Blankenburg, John Birkinbine, chairman of the state water supply commission, and Director of Public Works Cooke.

Municipal Engineers of the City of New York.

At the next regular meeting of the society, to be held at 8.15 p. m., in the Engineering Societies Building, 29 West 39th street, Manhattan, on Wednesday, October 23, 1912, a paper, entitled "The Fourth Avenue Subway, Brooklyn," will be presented by H. A. Oestreich, Senior Assistant Division Engineer, Public Service Commission. The paper will be illustrated by lantern slides.—George A. Taber, Secretary.

Iowa League of Municipalities.

The annual convention was held at Sioux City, Sept. 27. Proposed legislation giving the cities greater powers was the principal topic of discussion. The following officers were elected: President, Mayor A. H. Smith, Sioux City; vice-president, Mayor J. F. Ford, Fort Dodge; secretary, Frank G. Pierce, Marshalltown; treasurer, Mayor R. C. Thompson, Waterloo.

Marshalltown won over Burlington in the race for the 1913 convention.

American Society of Municipal Improvements.

The nineteenth annual convention will be held at Dallas, Tex., November 12 to 15. On Monday, Nov. 11, the Committee on Standard Specifications and the several sub-committees on Brick, Asphalt, Wood Block, Concrete and Bituminous paving will meet at the society headquarters, Oriental Hotel, to discuss standard specifications for those pavements. Members of the Organization for Standardizing Paving Specifications are urgently invited to attend these meetings, as are all others specially interested in paving specifications. At 7.30 Monday evening, the Finance Committee will meet. The program of the convention proper is as follows:

Tuesday, Nov. 12, 11 a. m.—Convention called to order. Opening addresses. Regular order of business: 1. The President's address. 2. Reports of the Secretary and Treasurer. 3. Report of the Executive Committee. 4. Report of the Finance Committee. 5. Reports of Special Committees. 6. Miscellaneous Business. Afternoon, automobile ride to points of interest.

8 P. M. Report of Committee on Garbage Disposal and Street Cleaning, H. E. Briggs, Milwaukee, Wis., Chairman. Report of Committee on Park Development and Maintenance, William Solotaroff, Superintendent Shade Tree Commission, East Orange, N. J., Chairman. "A System of Park Accounting," by G. A. Parker, Superintendent Park Department, Hartford, Conn. Report of Committee on Municipal Legislation and Finance, Maurry Nicholson, City Engineer, Birmingham, Ala., Chairman. "The City Economic," by Louis L. Tribus, Commissioner of Public Works, Richmond Borough, New York City. Report of Committee on Municipal Data and Statistics, James C. Hallock, Deputy Chief Engineer, Newark, N. J., Chairman. "Standard Forms for Municipal Utilities," by A. Prescott Folwell, Secretary of the Society, New York City.

Wednesday, Nov. 13, 9 A. M.—Report of Committee on Sewerage and Sanitation, A. F. Macallum, City Engineer, Hamilton, Ont., Chairman. "Pollution of Surface Waters," by A. F. Macallum. "Sewerage Purification vs. Sewage Treatment," by T. Chalkley Hatton, Wilmington, Del. "The Status of the Imhoff Tank," by Henry N. Ogden, Professor of Sanitary Engineering, Cornell University. "Sewerage and Sanitation," by E. L. Dalton, Dallas, Tex. "The City Engineer and the Health Board," by J. N. Hazlehurst, Atlanta, Ga.

Election of officers and selection of next place of meeting.

2 P. M.—Report of Committee on Standard Specifications, Chas. C. Brown, Indianapolis, Ind., Chairman. Report of Sub-Committee on Brick Paving, E. H. Christ, President Board of Public Works, Grand Rapids, Mich., Chairman. Report of Sub-committee on Bituminous Paving, Linn White, Chief Engineer South Park Commission, Chicago, Chairman. Report of

Sub-committee on Asphalt Paving, George W. Craig, City Engineer, Omaha, Neb., Chairman. Report of Sub-committee on Wood Block Paving, A. W. Dow, New York City, Chairman.

8 P. M.—Banquet to the society by the city of Dallas.

Thursday, Nov. 14, 9 A. M.—Report of Sub-committee on Concrete Paving, F. R. Charles, City Engineer, Richmond, Ind., Chairman. Report of Sub-Committee on Sewers, E. J. Fort, Chief Engineer of Sewers, Brooklyn, N. Y., Chairman. Report of Committee on Traffic on Streets, J. W. Howard, New York City, Chairman. "Effect of Traffic on Bituminous Pavements," by Isaac Van Trump, Chicago, Ill. Report of Committee on Street Lighting, D. A. Hegarty, Manager New Orleans Railway and Light Co., Chairman. Report of Committee on Water Works and Water Supply, S. A. Freshney, Manager Grand Rapids-Muskegon Power Co., Grand Rapids, Mich., Chairman.

2:30 P. M.—Trip to the oil refinery of the Texas Company and two large cement mills.

8 P. M.—Report of Committee on Street Paving, George W. Craig, City Engineer, Omaha, Neb., Chairman. "Thermal Effects on Cement-Filled Brick Pavements," (illustrated by lantern slides), by James E. Howard, Bureau of Standards, Washington, D. C. "Durability of Grouted Granite Pavements," by William A. Howell, Engineer of Streets and Highways, Newark, N. J. "Testing Bitumens," by Isaac Van Trump, Chicago, Ill.

Friday, Nov. 15, 9 A. M.—Discussion of Question Box. Postponed papers and discussions. Other unfinished business.

In the afternoon it is proposed to visit Ft. Worth, where the society will be entertained by the city. A considerable number of the members will leave that night for Houston and Galveston, where Saturday and perhaps one or two more days will be spent.

An exhibition of municipal appliances will be given by the associate members of the society, as in previous years.

It is suggested that as many as possible leave St. Louis for Dallas by special train about noon on Sunday, Nov. 10. Also that members from north and east St. Louis purchase tickets to Houston via Dallas over the M. K. & T., the additional fare being very little, so that all can visit Houston together on Saturday.

The Oriental Hotel will be the headquarters of the society.

Iowa Association of Chiefs of Police.

The annual convention will be held in Des Moines, Nov. 1-2. Captain H. T. Wagner, Waterloo, secretary of the association, has sent out invitations to all departments not members to join.

The present officers of the association are as follows: President, W. T. Dineen, formerly of Waterloo; vice-president, George Yeager, Des Moines; second vice-president, C. F. P. Froom, Council Bluffs; secretary-treasurer, H. T. Wagner, Waterloo.

PERSONALS

Arenshaw, Frank G., Mobile, Ala., has been elected Chief of the Police Department.

Bodmer, Wm., Wilkes-Barre, Pa., has been appointed City Superintendent of Highways for Luzerne County.

Olmsted, Frederick Law, Landscape Architect, Brookline, Mass., has been retained by the Mayor and Park Board of Denver, Colo., to lay out a new system of mountain parks.

Powers, W. I., J. T. Trowbridge, Nathan L. Breggs, Henry Solomon have been named as members of the Sewerage Commission of Boonton, N. Y.

Wood, Walter, formerly with the Chickamauga Park Commission as Superintendent of Parks, has assumed active charge of the Bureau of Parks and Buildings of the city of Chattanooga, Tenn.

Atkinson, W. E., Monroe, La., has been appointed Chief Engineer of the State Highway Department.

Moyer, J. A., formerly of the University of Michigan, has been appointed Professor of Mechanical Engineering, in the School of Engineering, Pennsylvania State College. George W. Eckhard, formerly of Milliken University, has been appointed Assistant Professor of Structures. Dean John Price Jackson reports that the enrollment of freshmen in engineering this year is 354.

Koester, Frank, Consulting Engineer, has removed his office from 115 Broadway, to 50 Church Street, Hudson Terminal Bldg., New York City. Mr. Koester is principally engaged in steam and hydroelectric power plant work, electric transmission and traction. He recently finished the plans for a central asphalt repairing plant of 3,000 square yards daily capacity, for which he was retained as an expert by the Borough of Manhattan, New York City. Mr. Koester is the author of several technical books; he has just completed a book on American City Planning, which is based on European practice, and adapted for American Conditions.

Crosby, Maj. W. W., Consulting Engineer, Baltimore, Md., has moved his offices to 1431 Munsey Building.

Dodge, Kern, Philadelphia, Pa., formerly with Dodge and Day, has returned from Europe and opened offices in the Morris Building where he will give his attention to the engineering and financing of public service properties.

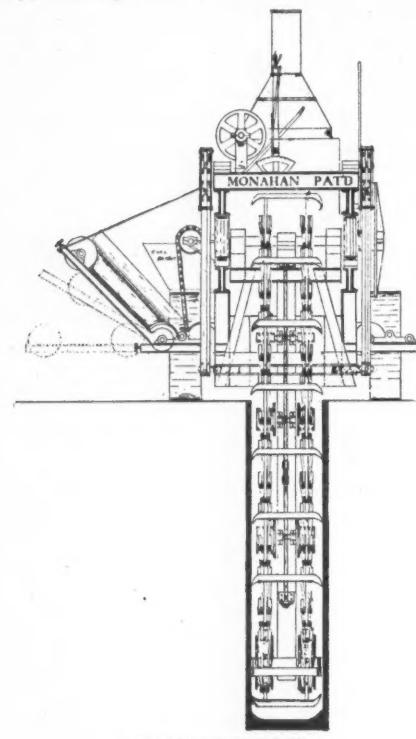
The following Mayors have been elected:

Alabama
Mobile, Laz Schwarz.
Roanoke, Wm. Handley Mann.
Tennessee
Cleveland, Col. T. E. Thatch.
Louisiana
New Orleans, Martin Behrman.
Georgia
Crawfordville, W. O. Holden.

MUNICIPAL APPLIANCES

Monahan Trench Digger.

Wm. Heggie, Joliet, Ill., manufactures the Monahan trench digging machine shown in the illustrations. Simplicity and strength were the special aims of the inventor. The machine is of the bucket type. The buckets deliver the excavated material onto a belt conveyor which piles it up on one side of the trench. Power is supplied by a vertical boiler and a 45 horse-power self-propelling double link motion engine. Three jaw clutches control the entire operation of the machine, including traction. On the main drive two shrouded gears, 6-inch face with $2\frac{1}{2}$ -inch pitch teeth are used. The



TRENCH DIGGER.

sprocket chain is only ten feet long. On the traction device there is a direct drive to the back traction wheel, which is 54 inches in diameter and 48 inches in width. An open steer gear of 4-inch pitch eliminates the need of a differential. The machine, it is claimed, is propelled and handled as easily as a steam roller. All parts of the machine including the digging chain can be oiled.

The buckets are of the open type. They are placed 28 inches apart. They are made in sizes from 24 to 48 inches wide by 10 inches deep. These buckets are held on the chain by two arms attached to the link ahead so as to give the bucket an opening of 72 inches at the dumping end. The teeth are of tool steel bar and can be replaced by an ordinary blacksmith. They are set in cast pockets and consist of pieces of $1\frac{1}{2}$ by 1-inch tool steel. The Monahan trench digger will excavate a trench varying in width from 28 inches to four feet. The maximum depth of excavation is twenty feet. The range of feed is from 37 to 210 feet

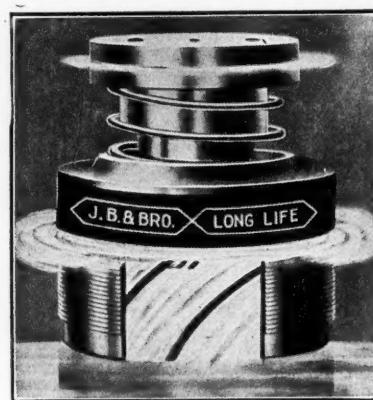
per hour, or at any intermediate speed as the operator desires. The buckets are held by cotter pins which act as a safety device, shearing off when an obstacle is struck, preventing further damage. The pins do not sustain the resistance in ordinary digging. Buckets deliver freely with either wet or dry dirt. The conveyor, which carries the dirt to one side, can travel at a maximum speed of 1,800 feet per minute and deliver the dirt to a height of 16 feet above the ground if desired.

Improved Valve Seat.

A marked improvement in valve construction which is compelling attention of leading concerns is found in the Boyd-Turbine Valve Seat, manufactured by James Boyd & Bro., Inc., of Philadelphia, Pa.

By introducing a rotary motion, the makers of this valve seat have overcome a difficulty which has long been a costly factor in pumping engines. They have cut down the wear and tear of rubber valves and declare that the life of the valves is thereby increased at least 300 per cent. The Boyd-Turbine Valve Seat rotates slightly with each stroke of the pump. This action is brought about by the water passing through this valve seat at a proper angle, due to the peculiar construction of the ribs. The ribs are curved and slightly overlapping, making the water strike the valve at an angle instead of coming against it perpendicularly as in the old style straight port valve seat. The rotary action, although slight, is nevertheless complete, seating the valve in a different position with each stroke of the pump. This insures uniform wear and a tight fit which naturally reduces the slippage. Moreover, the water striking the valve at an angle causes less friction, and in cases where gravel, sand or sticks are forced through the pumps, the valves clear themselves of all foreign matter. Great advantages arise from the rotating feature in the increase in the life of the rubber valves. This manufacturers guarantee to be

over 300 per cent. On account of less friction and less slippage the manufacturers are able to guarantee a saving of at least 10 per cent. of steam. Ease of operation, rotation of valve and the fact that no pocket is formed

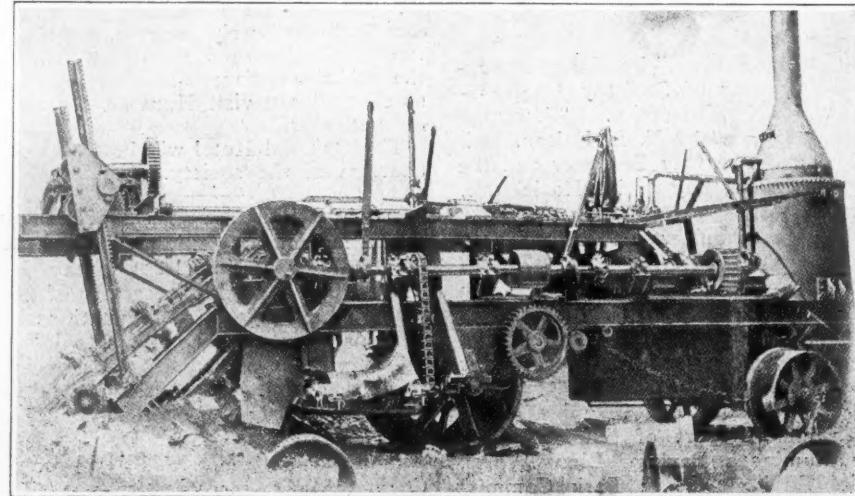


ROTARY PUMP VALVE.

under the valve practically eliminate water hammer. The Boyd-Turbine Valve Seat is of heavy cast brass. The post or stem is of cast manganese bronze finished all over and threaded to fit tightly in the seat. The spring collar acts as a cylinder, discharging the water between its upper face and the lower face of the post or stem, forming a thin film of water between these two parts. This reduces friction and enables the valve to rotate uniformly. The distance of rotation is not more than $\frac{1}{8}$ to $\frac{1}{4}$ of an inch with each stroke of the pump. The springs are carefully formed of phosphor bronze wire.

Equitable One Drum Asphalt Mixer.

The Equitable Asphalt Maintenance Co., 1113 Commerce Building, Kansas City, Mo., have placed on the market a one drum asphalt heating and mixing plant. The general features of the plant follow closely their two drum plant which has been made for several years. Both plants were developed in connection with their work of resurfacing pavements with asphalt by means of the Lutz surface heater. However, the plants are suitable for any sort of work, either standard asphalt or bituminous concrete, within



SIDE VIEW MONAHAN TRENCH DIGGER

their capacity. Figures of an eleven day run at Elmhurst, L. I., N. Y., in August of this year, showed an average capacity of nearly 900 square yards a day of 2-inch surface composed of a stone and sand mixture. The rated capacity of the plant, however, is given as 800 square yards per day.

The total weight of the one drum plant is 30,000 pounds. Length over all, 21 feet 8 inches. Height over all, 19 feet 11 inches. Total width, 12 feet 8 inches. The drum is 8 feet in diameter and 7 feet long. A blast of hot air, without flame, from an oil burner does the heating. Power is supplied by a vertical steam boiler, submerged tubular type, 44 inches in diameter. The engine is 25 horse power enclosed vertical center crank type. The crank shaft extends beyond the bearings to carry the driving pinion and fly wheel. The crank shaft is 3 3-16 inches in diameter. The fuel oil tank has a capacity of 300 gallons. The heater is of heavy steel lined with fire brick, provided with cast iron doors and oil burner. The frame is of 10-inch 20-pound channel steel. The front wheels are 12 inches wide and the rear 20. The elevator has heavy malleable iron boots and special boot for loading. The hopper into which the elevator discharges has sufficient capacity for one batch. A pole is provided with evener yoke, etc., by which four horses can move it about.

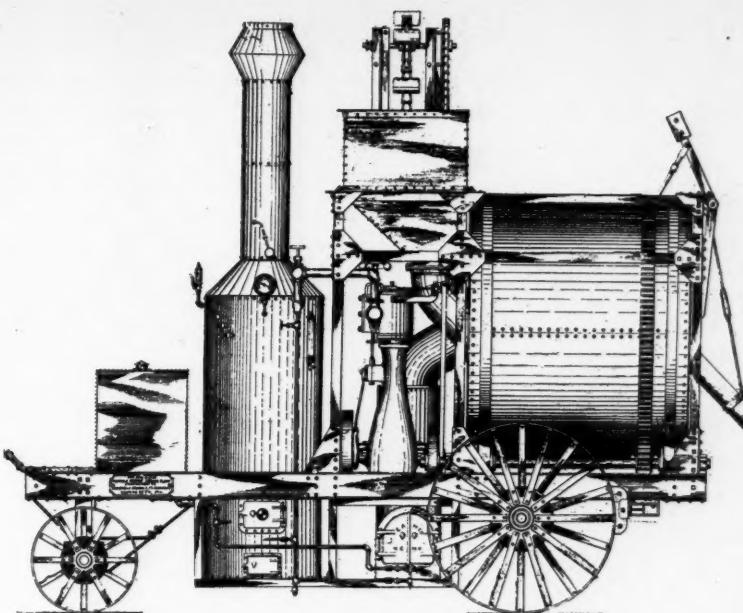
Belt-Driven Air Compressor.

We illustrate below a new enclosed type, self-oiling, belt-driven air compressor, the smallest size of a new line being put on the market by the Chicago Pneumatic Tool Company, Chicago and New York. This particular compressor furnished the compressed air for operating all air apparatus at the recent annual convention and exhibi-

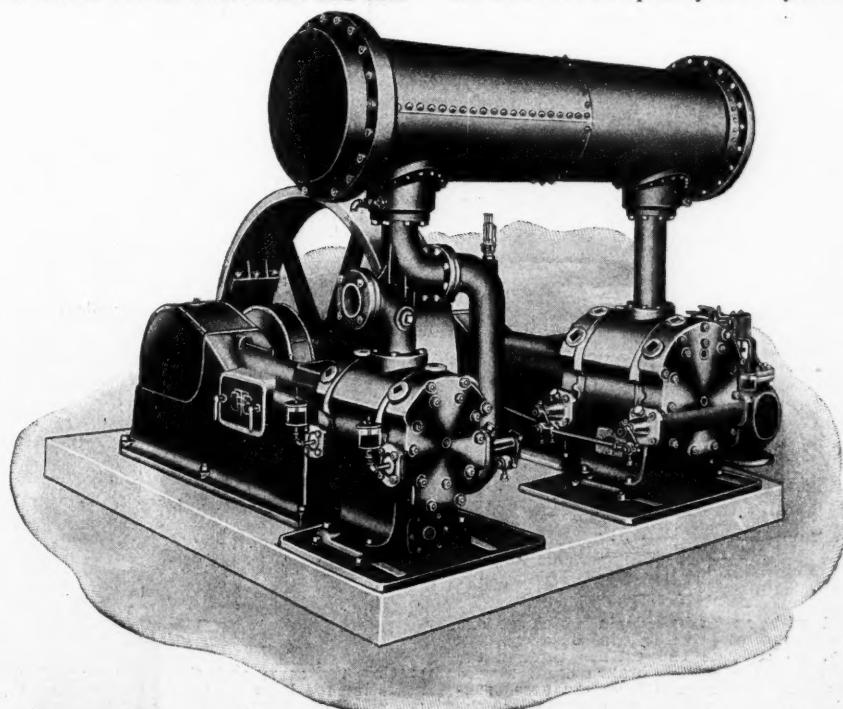
bition of the American Master Mechanics and Master Car Builders' Associations held at Atlantic City, N. J., June 12th to 22d, inclusive. It is known as the "Chicago Pneumatic" Class M-CB, having two-stage air cylinders, 16 and 10 inches in diameter, with 12-inch stroke. At its rated speed of 210 revolutions it has a displacement of 576 cubic feet per minute. Mechanical inlet air valves of the semi-rotary Corliss type are used, actuated by eccentrics on compressor shaft. Discharge valves are of the Chicago pneumatic air-cushioned poppet type, placed radially in the heads. This combination insures high volumetric efficiency and the elimination of valve troubles, as the valves are interchangeable and most accessible for adjustment and renewal. Heads and cylinder walls are completely water-jacketed

and arranged with independent water supply, permitting the use of solid gaskets between heads and cylinders. Frames are full tangye type with bored crosshead guides completely enclosing crosshead bearings. Cranks and eccentrics are enclosed with substantial planished iron casing, enabling complete flood lubrication of main bearings, crosshead and moving parts by means of automatic gravity lubrication. Inlet valves and pistons are lubricated by large glass sight feed lubricators on caps of inlet valves, and all valve gear bearings have extra large compression grease cups. The intercooler is of the steel shell marine condenser type, mounted overhead, provided with composition tubes, baffle plates and separator drip pockets. Air cylinders are bolted directly to the tangye frames, and in addition extend down to large sole plates with drip guards all around. Cranks are of the balanced disc type, pressed and keyed to shaft. The driving pulley is split-keyed to shaft and machined true on face and edges. It is of unusually heavy design to give the necessary flywheel effect. Control is effected by an improved throttling intake controller operated by receiver pressure, capable of close regulation and adjusting the load to meet the air demands, so that the power consumption is reduced to a minimum.

This particular installation also included a Westinghouse type "HF" slip-ring induction motor, and a Cutler-Hammer controller with diaphragm attachment arranged to shut down or start up motor in accordance with the air demands. The combination represents the latest developments in high efficiency air power practice, and, owing to the type of valves, is noiseless in operation. The same type is furnished in capacities up to 4,000 cubic feet per minute. Equivalent sizes and capacities can be furnished in short belt drive and motor drive with motor mounted directly on compressor shaft,



ONE DRUM ASPHALT HEATER AND MIXER

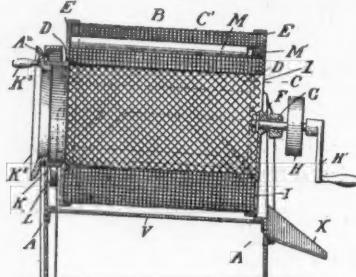


CHICAGO PNEUMATIC COMPRESSOR OF MODERATE CAPACITY.

PATENT CLAIMS

1,037,221. DISTRIBUTER FOR SCREENING APPARATUS. Raymond W. Dull, Aurora, Ill. Filed Oct. 6, 1909. Serial No. 521,248.

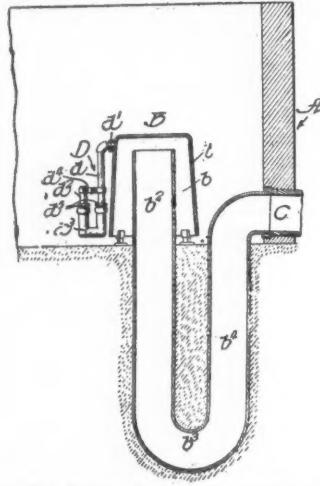
A stationary screen and means for distributing material thereon, comprising a series of plates arranged in stepped relation to each other, to provide a series of distributing openings between them, with a clear space below, which openings are of the same, or substan-



tially the same, size or capacity, and a stationary or motionless support for said plate, said openings being disposed at different heights, each plate adapted to hold an accumulation of the material, to prevent wearing away of the plates, said plates being so disposed relative to each other that said openings are not closed by accumulation of material thereon.

1,031,791. ADJUSTABLE VENT FOR SIPHONS. Samuel F. Miller, South Orange, N. J., assignor to Pacific Flush Tank Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 26, 1909. Serial No. 514,717.

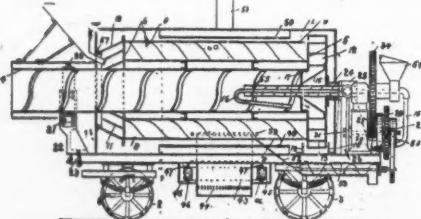
In a siphon, in combination with the longer and the shorter leg thereof, of a vent adapted for determining both the sealing level and low head of the siphon embracing a U-shaped pipe having substantially upright legs, one of which is longer than the other, means con-



nnecting the longer leg of the vent with the interior of the siphon, the upper end of the shorter leg of the vent being located substantially at the sealing level of the siphon, and means for adjusting the level of the bend of said U-shaped pipe with reference to the substantially fixed level of the said shorter leg of the vent, said means being adapted for varying the low head of the siphon, determined by the height of the bend of the vent, to different levels below said sealing level of the siphon.

1,041,226. MACHINE FOR CLEANING, DRYING, HEATING AND MIXING TARRED MACADAM. Richard Ames, Brighton, England. Serial No. 646,752.

In a machine of the class described, the combination with a heating chamber, a re-



versible body mounted therein, a feeding device disposed near the forward end of the said reversible body, a delivery device disposed

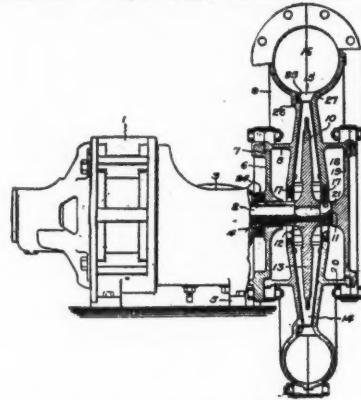
near the rear end of the reversible body, means for rotating the body, and means for heating, screening, drying and mixing the material fed.

1,037,371. SAND-SIFTER. Henry Tscherning, Freeport, Ill., assignor to Arcade Manufacturing Company, Freeport, Ill., a Corporation of Illinois. Filed April 3, 1911. Serial No. 618,730.

In a sand sifter, the combination with a supporting frame, of an inclined screen drum revolvably mounted in the frame and including concentric unattached screen cylinders held in position between rigidly and detachably connected parallel end plates each provided with concentric annular ribs fitting and forming the ends of said cylinders, respectively, the upper end plate being provided with a receiving opening registering with the inner cylinder and the lower end plate being provided with discharge openings just within the ribs, respectively.

1,041,511. CENTRIFUGAL COMPRESSOR AND PUMP. Richard H. Rice and Sanford A. Moss, Lynn, Mass., assignors to General Electric Co., a corporation of New York. Serial No. 356,327.

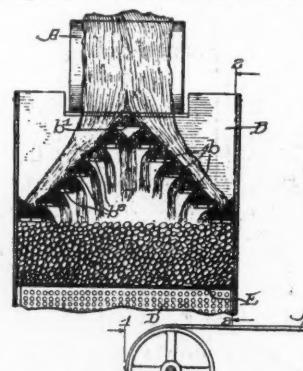
In an apparatus of the character described, the combination of an impeller having blades on opposite sides of the body thereof, a casting, the walls of which inclose the blades on the impeller and are provided with orifices, one in each side, through which the fluid en-



ters, the surfaces of said orifices being well rounded and arranged to direct the entering fluid radially to the blades, chambers formed on opposite sides of the impeller which are bounded on one side by said walls and which are larger in diameter than said orifices and supply fluid thereto, a conduit for supplying said chambers, a scroll receiving fluid from the impeller, and a nozzle having a plurality of partitions with diverging passages between them which receive fluid from the impeller, convert its velocity into pressure, increase its density and discharge it into the scroll.

1,037,676. GARBAGE-INCINERATING FURNACE. Edward Smith, Huntington, Ind. Filed April 23, 1912. Serial No. 692,647.

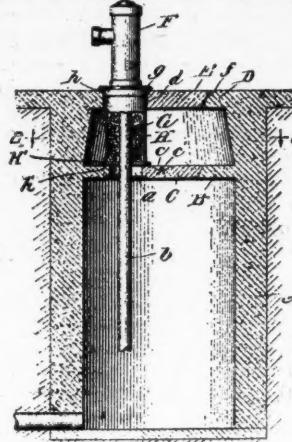
An incinerating furnace consisting of an outer hemispherical shell having a horizontal base, an inner hemispherical lining spaced from said shell, a chimney connected to the shell and base, a hearth on said base having a central opening which communicates with an opening in the base, said chimney adjacent its base being formed with a downwardly inclined outlet that extends through the said lining and has the wall formed by its bottom extending adjacent the hearth, said base being



formed with an arched drain which at one end communicates with said base opening and at its opposite end extends through the periphery of the base, a branch drain formed in the base that extends from the base opening and is curved upwardly to extend into the outlet at the end hereof adjacent the hearth, and a fire box at one side of the hearth.

1,040,621. FIRE HYDRANT CATCH BASIN. Michael Clarkson, Chicago, Ill. Serial No. 492,046.

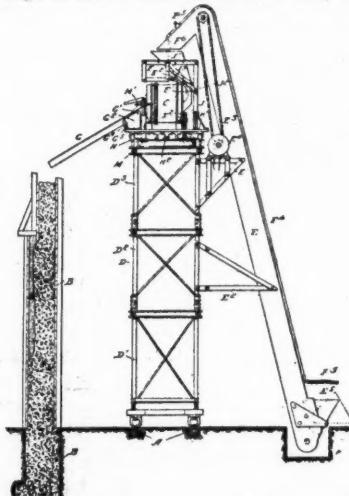
A hydrant basin comprising side walls, a platform between its upper and lower ends that divides the basin into an upper and lower chamber, a cover for the top of said basin having an opening therein, an opening in said



platform alining with said first-mentioned opening through both of which the depending hydrant pipe passes, a cylindrical casing connecting said openings and surrounding said pipe, a filling of non-conducting material inclosed in said casing and surrounding said pipe in the upper chamber, and means for closing the ends of said casing.

1,040,656. CONCRETE-SUPPLYING APPARATUS. Charles W. Eaton, Chicago, Ill. Serial No. 598,237.

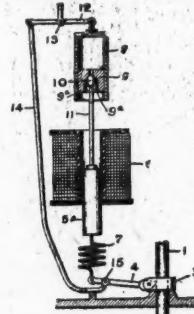
The combination with a suitable track, of a tower-like carriage arranged for movement along said track, a frame mounted upon the carriage to rotate about a vertical axis, a con-



crete mixer mounted upon said frame to rotate about its own horizontal axis, a mixer-actuating motor supported by and rotating with said frame, and means for at will rotating said frame through any desired angle with respect to the carriage.

1,041,197. ARC-LAMP. Elihu Thomson, Swampscoot, Mass., assignor to General Electric Co., a corporation of New York. Serial No. 530,711.

In an electric arc lamp, the combination with the arc establishing clutch, the lever for op-



erating the same and the electromagnet for actuating the lever, of means for damping the action of the electromagnet and for reinforcing the bite of the clutch by and in accordance with the action of the electromagnet.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards.

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also correction of any errors discovered.

BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Indiana	Frankfort	Oct. 26, 2 p.m.	Constrn. 3 miles gravel road	C. F. Cromwell, Aud.
Illinois	Momence	Oct. 26	Constrn. 3 miles hard roads	Highway Commissioners.
New Jersey	Trenton	Oct. 26	Repaving with bit. macadam at Kearney.	Dept. Pub. Roads.
Ohio	Harsman	Oct. 26, 2 p.m.	Constrn. gravel roads	A. Clingman, Township Clerk.
Indiana	Richmond	Oct. 26, 11 a.m.	Imp. highway	L. F. Bowman, Co. Aud.
Ohio	Pleasant Ridge	Oct. 26, noon	Constrn. cement sidewalks	W. T. Mothershead, Vil. Clerk.
Ohio	London	Oct. 27	Constrn. gravel roads	H. L. McCafferty, Co. Surv.
New Jersey	New Brunswick	Oct. 28	Constrn. macadam roads	A. B. Fox, Co. Engr.
Ohio	Wellsboro	Oct. 28	Constrn. road improvements	L. Walker, Chrmn. Co. Comrs.
Indiana	Indianapolis	Oct. 28, 10 a.m.	Constrn. retaining walls and culverts	W. T. Patten, Auditor.
Kansas	Pittsburg	Oct. 28, 8 p.m.	Constrn. 1½ miles macadam	L. E. Curfman, City Engr.
Mass.	Boston	Oct. 28, noon	Constrn. tar macadam roadways and asphalt flooring	L. K. Rourke, Comr. Pub. Wks.
Kentucky	Louisville	Oct. 28, 2 p.m.	Constrn. granitoid sidewalk	Bd. of Pub. Works.
Ohio	Lisbon	Oct. 28	Constrn. road improvement	County Commissioners.
Idaho	Moscow	Oct. 28	Constrn. 30 blocks paving, cost \$184,000.	City Council.
New Jersey	Little Falls	Oct. 28, 8 p.m.	Constrn. cement or concrete sidewalks on a number of streets	C. H. Booth, Twnshp. Clk.
New Jersey	Ridgewood	Oct. 29	Constrn. brick pavements	F. W. Simonds, Vil. Engr.
California	Corona	Oct. 29	Constrn. 3 miles curb & gutter	City Clerk.
Ohio	Salina	Oct. 31, noon	Constrn. roads	J. L. Morrow, Co. Aud.
Ohio	Columbus	Nov. 1, 2 p.m.	Constrn. 1 mile macadam in Moorfield.	J. R. Marker, St. Hway Comr.
Ohio	Columbus	Nov. 1, 2 p.m.	Constrn. 1 mile sulphite liquor-treated slag macadam	J. R. Marker, St. Hway Comr.
Idaho	Idaho Falls	Nov. 1	Resurfacing 25,000 yds. macadam	City Council.
New Jersey	Elizabeth	Nov. 1, 8:30 p.m.	Constrn. bitulithic & trap blk pavements.	W. P. Neafsey, St. Comr.
Ohio	Cincinnati	Nov. 1, noon	Repairing pike	Stanley Struble, Pres.
Ohio	Silverton	Nov. 1, noon	Preparing pike	Stanley Struble, Pres. Comrs.
Ohio	Cleveland	Nov. 2, 11 a.m.	Grading road	J. E. Goldenbogen, Co. Clerk.
Dist. of Col.	Washington	Nov. 2	Constrn. roads at Naval Hosp. cost \$8,450.	Navy Dept.
Indiana	Indianapolis	Nov. 2, 10 a.m.	Furn. 32 carloads crushed stone	W. T. Patten, Co. Aud.
Kansas	Kansas City	Nov. 4	Constrn. macadam	County Commissioners.
Alabama	Geneva	Nov. 4, noon	Constrn. 5½ miles sand clay road	W. S. Keller, St. Hway Engr.
Indiana	Richmond	Nov. 4	Constrn. gravel roads, Wayne Co.	H. Guthrie, Co. Aud.
Indiana	Richmond	Nov. 4	Constrn. gravel roads, Huntington Co.	L. F. Bowman, Co. Aud.
Indiana	Shelbyville	Nov. 4, 11 a.m.	Constrn. roads in Moral Township	F. W. Fabel, Co. Aud.
Indiana	Hartford City	Nov. 4, 2 p.m.	Constrn. macadam roads	J. Cronin, Jr., Co. Aud.
Alabama	Luverne	Nov. 4, noon	Constrn. 6 miles sand clay road	W. S. Keller, St. Hway Engr.
Pennsylvania	Altoona	Nov. 4, 5 p.m.	Constrn. brick walls and curbing	C. M. Piper, Sec.
Indiana	Marion	Nov. 6, 2 p.m.	Constrn. gravel roads	E. H. Kimball, Co. Aud.
Indiana	Logansport	Nov. 6, 10 a.m.	Constrn. 3 macadam roads	J. E. Wallace, Co. Aud.
Indiana	Crawfordsville	Nov. 6	Constrn. 10 macadam and gravel roads	D. Engle, Co. Aud.
Louisiana	Lake Charles	Nov. 6	Constrn. asphalt & wood block pavement	City Clk.
Indiana	Lafayette	Nov. 6, 10 a.m.	Constrn. gravel roads	G. W. Baxter, Aud.
Alabama	Vernon	Nov. 7, 11 a.m.	Constrn. 4 miles gravel	W. S. Keller, St. Hway Comr.
Indiana	Crown Point	Nov. 7	Constrn. 2 gravel roads	C. A. Johnson, Co. Aud.
Indiana	Evansville	Nov. 7, 10 a.m.	Constrn. road	County Commissioners.
Indiana	Logansport	Nov. 8, 10 a.m.	Constrn. road	J. E. Wallace, Co. Aud.
Indiana	Columbus	Nov. 8, 10 a.m.	Constrn. macadam road	P. J. Slater, Co. Aud.
Texas	Houston	Nov. 11, noon	Grading 4 miles road, cost \$8,000	D. C. Smith, Sec.
Alabama	Marion	Nov. 11	Constrn. creosoted wood and bit. pave.	G. C. Scales, Co. Engr.
Ohio	Canton	Nov. 13, 10 a.m.	Imp. 2 streets	J. H. McConnell, Co. Aud.
New Jersey	Freehold	Nov. 13, 11 a.m.	Constrn. gravel road	J. M. Corliss, Dir. Freeholders.
Missouri	Webb City	Nov. 18	Constrn. 2,000 ft. cement curb & gutter	E. W. Robinson, City Engr.
Ohio	Springfield	Nov. 18	Constrn. roads	H. V. Long, Ch. Freeholders.
SEWERAGE				
Rhode Island	Newport	Oct. 26, 11 a.m.	Constrn. catch basins, &c., at Naval Sta'n.	H. H. Stanford, Wash., D. C.
Virginia	Bridgewater	Oct. 26, 3 p.m.	Constrn. system of sanitary sewers and water works	L. V. Miller, Ch. Water Com.
Illinois	Quincy	Oct. 28, 2 p.m.	Constrn. 7 m. brick and clay pipe sewer	D. Schroer, City Clerk.
Nebraska	West Point	Oct. 28	Constrn. sewer system	A. Hanft, City Clerk.
Kentucky	Louisville	Oct. 28, noon	Constrn. disposal plant at sanitorium	L. J. Ditmar, Pres.
Mass.	Gloucester	Oct. 29, noon	Constrn. drain	C. H. Barrett, Chrmn.
New York	Ossining	Oct. 29, 8 p.m.	Constrn. sewer system	J. M. Terwilliger, Vil. Clerk.
Ohio	Lorain	Oct. 29, noon	Con. 42-in. concrete or clay pipe sewer	L. B. Johnston, Clk. Dir. Pub. Ser.
Pennsylvania	Harrisburg	Oct. 30	Con. protective wall for intercept. sewer	D. E. Tracy, Sec. D. P. W.
Iowa	Esterville	Oct. 31, noon	Constrn. 1,250 ft. 8-in. clay pipes	N. B. Egbert, City Clerk.
New York	Newark	Nov. 1, 10 a.m.	Constrn. 85,000 ft. 6 to 15-in. pipe sewers	J. E. Wiser, Clerk.
New Jersey	Plainfield	Nov. 4	Constrn. 28,000 ft. 8 to 24-in. pipe sewers	City Council.
New York	Harrison	Nov. 6	Constrn. sewerage system	L. S. Schrenkeisen, Chrmn.
New York	Syracuse	Nov. 11	Constrn. 48-in. sewer	Sewerage Board.
Texas	Houston	Nov. 12, noon	Constrn. 28,000 ft. of 8 to 42-in. pipe sewer	D. C. Smith, City Sec.
New Jersey	Newark	Nov. 12, 2 p.m.	Constrn. Section 10 Passaic Valley sewer	J. S. Gibson, Clerk Comr.
Alabama	Florence	Nov. 18, 7:30 p.m.	Constrn. storm water sewer	J. B. White, City Clerk.
Iowa	Tipton	Jan. 15	Constrn. sewers	P. D. Ketelsen, City Clerk.
WATER SUPPLY				
Virginia	Bridgewater	Oct. 26	Constrn. water works & sewers	L. V. Miller, Ch. Water Com.
Ohio	Clyde	Oct. 26, noon	Enlarging water works	H. B. Diram, Clerk Trustees.
Washington	Grand View	Oct. 28, 7 p.m.	Constrn. water works system complete	W. H. Dunbar, Twn. Clk.
Texas	Waco	Oct. 28	Con. reinforced conc. water works intake	W. M. Sleeper, Chrmn. Com.
Ohio	Salem	Oct. 28, noon	Constrn. addition to pumping station	D. H. Rummel, Dir. Pub. Serv.
New York	New York	Oct. 29, 11 a.m.	Constrn. maintenance bldgs. complete	Board of Water Supply.
Indiana	Richmond	Oct. 30, 10 a.m.	Furn. water to city for 25 years	B. A. Bescher, City Clerk.
Illinois	Chicago	Oct. 30, 11 a.m.	Furn. one triple expansion crank & flywheel engine, capacity 25,000,000 gals.	L. E. McGann, Comr. Pub. Wks.

BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
Illinois.....	Assumption.....	Oct. 30.....	Constrn. steel water tank	R. F. Johnson, Sec. B. L. I.
Iowa.....	Stuart.....	Oct. 30.....	Constrn. 10-in. well & pump	City Clerk.
Indiana.....	Huntington.....	Oct. 31.....	Constrn. 6-in. water main in number sts.....	I. Hamberger, City Clerk.
Texas.....	Dallas.....	Nov. 1.....	Constrn. pumping station	J. B. Winslett, City Sec.
So. Carolina.....	Barnwell.....	Nov. 1, noon.....	Constrn. water works and lighting plant.....	W. Hawes, Jr., Engr.
Georgia.....	Waycross.....	Nov. 5.....	Constrn. artesian well	City Clerk.
Maryland.....	Baltimore.....	Nov. 6, 11 a.m.....	Constrn. 2 reservoirs	J. H. Preston, Mayor.
Canada.....	St. Boniface.....	Nov. 8.....	Furn. motor and pump	J. B. Cote, City Clerk.
Porto Rico.....	Fajardo.....	Nov. 8.....	Constrn. water works	Manuel Guzman, Mayor.
Texas.....	Waco.....	Nov. 11.....	Constrn. 6,000,000-gal. filtration plant.....	City Clerk.
Arkansas.....	Magnolia.....	Nov. 11.....	Furn. material for water works system.....	Water Works Comrs.
Canada.....	Point Grey.....	Dec. 2.....	Furn. 33 miles 4 to 12-in. steel pipe	B. J. Cunliffe, City Clerk.
LIGHTING AND POWER				
Ohio.....	Clyde.....	Oct. 26, noon.....	Enlarging electric light plant	H. B. Diram, Clerk Trustees.
Nebraska.....	Clark.....	Oct. 28.....	Constrn. lighting plant, cost \$4,800	Village Clerk.
Georgia.....	Augusta.....	Oct. 28, 4 p.m.....	Furn. power plant for building	City Clerk.
Ohio.....	Rockport.....	Oct. 28, noon.....	Furn. elec. light and power	F. F. Feuchter, Vil. Clerk.
Canada.....	Yorkton, Sask.....	Oct. 31, noon.....	Furn. 500 h.p. Diesel engines, tungsten st. lighting apparatus, &c.	M. M. Ingles, Elec. Engr.
Ohio.....	New Bremen.....	Nov. 2.....	Furn. 125 h.p. boiler	E. R. Haines, City Clerk.
Dist. of Col.....	Washington.....	Nov. 2.....	Furn. power plant appurtenances for Navy Yard, Portsmouth, N. H.	Navy Dept.
Mississippi.....	Brooksville.....	Nov. 5.....	Furn. 60 h.p. solar engine, compressor and plunger pump	T. S. Gay, Town Clerk.
Pennsylvania.....	Philadelphia.....	Nov. 14, noon.....	Furn. electric lighting for year 1913....	G. D. Porter, Dir. Pub. Ser.
Nevada.....	Fallon.....	Nov. 21.....	Furn. gates, valves and operating mach...	U. S. Reclamation Service.
FIRE EQUIPMENT				
Louisiana.....	Morgan City.....	Oct. 26.....	Furn. 1,000 ft. fire hose	A. B. O'Brien, Sec.
Illinois.....	Cicero.....	Oct. 28, 8.30 p.m.....	Constrn. fire engine house	C. Stoffel, Town Clerk.
New Jersey.....	Gloucester.....	Nov. 7, 8 p.m.....	Furn. combination chemical and hose wagon, also 500 ft. fire hose	Frank Butler, Chrmn. Com.
Manitoba.....	Winnipeg.....	Nov. 13.....	Furn. 2 motor hose wagons, 2 horse-drawn hose wagons, 5,000 ft. 2½-in., 600 ft. 3½-in. hose & 30 fire alarm boxes....	Chrmn. Bd. of Control.
Iowa.....	Defiance.....	Jan. 1.....	Furn. hose cart and fire hose.....	Town Council.
BRIDGES				
Ohio.....	Carrollton.....	Oct. 26.....	Constrn. concrete bridge	County Commissioners.
Pennsylvania.....	Sunbury.....	Nov. 1, 11 a.m.....	Rebuilding walls of bridge	J. C. Tressler, Chief Clerk.
Arkansas.....	Little Rock.....	Nov. 8, 3 p.m.....	Constrn. concrete & steel viaduct	Bd. of Pub. Affairs.
Indiana.....	Laporte.....	Nov. 14.....	Constrn. approach to bridge	F. A. Hausheer, Co. Aud.
Indiana.....	Terre Haute.....	Dec. 1.....	Constrn. two concrete bridges	R. E. Gibbons, Co. Survey.
MISCELLANEOUS				
Indiana.....	Indianapolis.....	Oct. 28, noon.....	Constrn. retaining wall	Co. Commissioners.
Ohio.....	Youngstown.....	Oct. 28.....	Constrn. city building	W. H. McMillin, City Clerk.
New Jersey.....	Jersey City.....	Oct. 28, 2 p.m.....	Collecting and removing garbage, ashes and kitchen refuse one year	E. B. See, Clk. St. & Wat. Comrs.
Dist. of Col.....	Washington.....	Oct. 29, 2 p.m.....	Furn. motor trucks for yr. ending June 30. 1913.....	R. O. Bailey, Acting Sec. Comrs.
Georgia.....	Macon.....	Oct. 31.....	Constrn. county jail.....	Bd. of Pub. Works.
Indiana.....	South Bend.....	Nov. 7.....	Furn. crane	

STREET IMPROVEMENTS

Fort Payne, Ala.—Election will be held Nov. 5 for voting on whether De Kalb County shall issue bonds for purpose of building public roads.

Marion, Ala.—Property owners along North Washington st., extending from new bank building to Methodist Church, are making preparations to pave street with vitrified brick and asphalt.

Berkeley, Cal.—Pavement of College ave., from Bancroft way to south town line, and improvement of Cedar st. from Seventh st. east and west have been ordered through adoption of resolutions by Berkeley City Council.

Los Angeles, Cal.—Petitions have been received for improvement of various streets.

Los Angeles, Cal.—Improvements of large number of streets have been planned.

Los Angeles, Cal.—Negotiations between city of Alhambra and Conservative Investment Co. are now under way and about to be completed for paving of Hidalgo st., in Alhambra Park tract of company in Alhambra. Improvements on Hidalgo st. will also consist of installation of system of ornamental electric lights.

Monterey, Cal.—Petition is being circulated among property owners whose holdings front on Hoffman ave., between Lighthouse and Ocean aves., New Monterey, for purpose of having thoroughfare mentioned macadamized and improved otherwise.

Orange, Cal.—The City Trustees are stated to have decided to pave with asphalt 7 blocks on Chapman ave.

San Francisco, Cal.—Petition has been made for improvement of Thirty-fourth ave., between Geary and Anga sts.

San Jose, Cal.—Mayor favors establishment of public street paving plant, to be owned and operated by city.

San Francisco, Cal.—State Harbor Commission has notified Supervisors that it will join in paving Brannan st.

from First st. to Embarcadero, Beale st., from Bryant to Embarcadero, and Bryant st., from Main to Spear st.

San Francisco, Cal.—City Engineer has recommended that Ninth st., from Mission to Brannan, which United Railroads must keep in repair under terms of old franchise, be paved with basalt on concrete foundation, and with gravel and asphalt filler. City Engineer has recommended that Twelfth ave., between Geary and Anza sts., be paved with bitumen.

Hartford, Conn.—Plans are being considered for widening of Jewell and Wells sts.

Thompsonville, Conn.—Appropriation of \$20,000 has been voted for highways and bridges.

Anacostia, D. C.—District authorities have announced that granolithic sidewalks will be laid at these locations in near future: North side of V st., between 14th and 15th sts., both sides of 22d st., from Minnesota ave. to Railroad ave., front of premises 802 to 808 Portland st., Congress Heights and east side of W st., from Nichols ave. north.

Jacksonville, Fla.—Straightening of certain streets in East Jacksonville is being considered.

East St. Louis, Ill.—The City Council, it is stated, has decided to pave a portion of Broadway, at a cost of \$19,000.

Clinton, Ia.—Resolution has been adopted ordering Street Commissioner to construct 12-in. tile across Dunham ave. at Wallace ave.

Tama, Ia.—City is planning to shortly pave business streets.

Lafayette, Ind.—C. F. Hunt, who is engaged in gravel and concrete business here, has prepared map on which he has marked out several road systems for State. His plans have been inspected by number of persons interested in good roads and have been pronounced excellent. Mr. Hunt plans seven main roads as follows: No. 1, from Madison, through Muncie to Lagrange; No. 2, from New Albany, through Indianapolis

to South Bend; No. 3, from Evansville to Michigan City; No. 4, Lawrenceburg to Vincennes; No. 5, Richmond to Indianapolis to Terre Haute; No. 6, Portland to Fowler; No. 7, Fort Wayne to Plymouth, Hammond and Indiana Harbor. Road system as he has planned it would cover 1,350 lin. miles, and with roads that have already been improved, it is estimated that building system would cost about \$2,500,000.

South Bend, Ind.—Project for construction of 15 miles of good roads in St. Joseph County has been carried at special election in Walkerton.

South Bend, Ind.—Number of improvement resolutions have been confirmed by Board of Public Works. They are as follows: Resolution for pavement on alley south of Lake Shore railroad between Chapin and Scott sts.; grade, curb and walk on west side of Lafayette st., from North Shore drive to Parkovash ave.; water connections on Madison st., between east race and Eddy st.; grading and paving of Edwood ave., and pipe sewer on St. Louis st., from Cedar to Miner sts.

Topeka, Kan.—Petition has been made for grading and paving alleys between Ninth st. and Tenth ave. from Topeka ave. and Tyler st.

Topeka, Kan.—Plans for improvement of main road between Topeka and Tecumseh are being made by Walter J. Arnold, County Engineer, and James C. Shimer, County Commissioner.

Wichita, Kan.—The Board of Commissioners are stated to have passed resolutions providing for the paving of Murdoch and Fairmont aves.

New Albany, Ky.—The New Albany Board of Public Works has under consideration sidewalk improvements on some of side streets of city. Charles Appleby, city engineer, has been directed to prepare plans and specifications for sidewalk improvement on Troy st., from East 18th to East st., reducing roadway of street to 30 ft., and making grass plat between walk and property line.

City Engineer was also directed to establish grade on East st., north of Troy.

Lexington, Ky.—Mayor Cassidy has been authorized to sell bonds to pay for street improvements on West Third st., from Jefferson to Henry, and on North Upper st., from Church to Fifth.

Lafayette, La.—Appropriation of \$1,000 has been authorized for purchase of traction road machine.

Boston, Mass.—Orders have been referred to Committee on Finance appropriating \$7,500 for additional land for Savin Hill playground and \$33,000 for widening of Harvard st., from Commonwealth ave., to the Allston station.

Lowell, Mass.—At meeting of Municipal Council it was voted that City of Lowell pay \$5,100 as its proportionate share in construction of river boulevard.

Saco, Me.—Good granolithic sidewalk on Main st., Saco, on northwesterly side from cataract bridge to Pleasant st., will be built at same time as new pavement, if abutters will join city in movement.

Charlotte, Mich.—Report of Eaton County Road Commissioners, which will be presented to October session of Board of Supervisors will ask for appropriation of over \$30,000 for purpose of building 16 miles of good roads in this county. One will be built in each township.

Flint, Mich.—At special meeting of Supervisors it was decided to offer for sale additional \$100,000 of good roads bonds.

Saginaw, Mich.—Tentative plans for improvement of certain county roads at expense of \$39,000 are being considered.

Delano, Minn.—County Board has been petitioned to establish State road from Rockford northwest across county to South Haven.

St. Paul, Minn.—City Engineer Oscar Claussen recommends that all principal streets be paved and others macadamized.

Atlantic City, N. J.—Commissioner Thompson has under consideration plan to make Atlantic ave. one long, straight street from Absecon Inlet into lower part of Chelsea and Ventnor, and to accomplish this by deflecting the "kink" in avenue just above Albany and new city park into Ventnor ave., above park boundaries.

Jersey City, N. J.—Improvement of Lake st. between Hudson Boulevard and Germania ave., is planned. E. B. See, Clerk.

Jersey City, N. J.—Improvement of Romaine ave., has been planned.

Jersey City, N. J.—Mayor Wittpen has announced that appropriation would be made by Finance Board to cover cost of repairing Manhattan ave. sewer.

Brooklyn, N. Y.—Petitions have been received asking for improvements of large number of city streets.

Manhasset, L. I., N. Y.—Town Board of North Hempstead has received two new propositions to be voted upon at special election on Nov. 5. One was for expenditure of \$20,000 to macadamize Station road and Tenth st., Great Neck, from intersection of Hill road and Grace ave. Other was to spend \$30,000 for improving Carleton ave., Second, Third and Fifth ayes., Port Washington. Residents of Great Neck have sent in petition to improve Middle Neck road, from North Hempstead turnpike to All Saints Church. They have asked for \$40,000 for this improvement.

Newburgh, N. Y.—Resolution has been offered to Board of Supervisors of Orange County by Supervisor Elwood C. Smith, of Monroe, for purpose of providing for construction of county highway from village of Monroe to village of Washingtonville.

Niagara Falls, N. Y.—Repaving of Highland ave., from Virginia ave. to Whirlpool st. has been authorized.

Nyack, N. Y.—Electeds of State will vote this year on question of committing State to another issue of \$50,000,000 for improvement of highways.

Syracuse, N. Y.—All proposals for paving of Beverly road have been rejected by Board of Contract and Supply at request of the property owners. Residents are divided, some wanting creosoted wood block, others brick and others asphalt. New bids will be for all kinds of materials.

Syracuse, N. Y.—State Department of Highways is urging approval by voters at coming election of bond issue of \$50,000,000 for improved highway. Two-fifths of entire \$50,000,000, if bond issue is voted by people, will be available for improved highways, as State authorities direct, for State routes. Remaining three-fifths will be for roads. Boards of Supervisors may designate in their respective counties. It is contended that this corrects feature of first proposi-

tion for appropriation of \$50,000,000, which permitted construction of improved highways in favored localities.

Watertown, N. Y.—Common Council has approved of wood block for paving of State st., from Pleasant st. to California ave., short leaf pine to be used.

Raleigh, N. C.—Board of Aldermen has provided for \$45,000 loan, \$25,000 of which will be used for paving with concrete Davis st., between Fayetteville and Blount.

Cincinnati, O.—Plans and specifications have been ordered for improvement of Shawnee River road at estimated cost of \$21,162, and Strubel road at estimated cost of \$7,004. Commissioners have ordered damage resulting from landslide at Shady lane, Delhi Township, repaired at a cost of \$42,051.

Sidney, O.—City Council is said to have passed resolutions providing for paving of portions of Walnut ave. and N. Lane st.

Youngstown, O.—Resolution has been passed to pave Kyle st., between Pine st. and South ave.

Junction City, Ore.—Construction of sidewalks on various streets has been ordered.

La Grande, Ore.—Gravel bitulithic pavement will be laid on Jefferson and Second sts. at cost of about \$47,557.

Chester, Pa.—Plans have been prepared by Consulting Engineer A. F. Damon, Jr., for improvement of W. Ninth st. and Chester River, showing location of proposed retaining walls, concrete bulkhead and wharf and straightening to some extent of Chester River.

Chester, Pa.—It has been finally decided to curb, pave and gutter Hill st., from Upland ave. to Tents st.

Erie, Pa.—Resolution has been adopted directing City Engineer to advertise for proposals to carry out city's share of improvement of lower State st. from Second, north to the canal basin.

Erie, Pa.—Resolution has been adopted instructing City Engineer to prepare data and City Solicitor ordinance providing for paving of Ross st., Third to Fifth st., and directing City Engineer to advertise for proposals and prepare specifications for improving of State st., from Second to the Public Dock.

Erie, Pa.—Resolution has been passed instructing City Solicitor to prepare ordinance for \$2,000 bond issue for construction of culvert on State st., south of Twenty-sixth.

Erie, Pa.—Ordinances have been passed for paving with brick of alley running from Peach st. to Sassafras st., between Fifteenth and Sixteenth sts., and paving of Fourth st., from west line of Sassafras st. to west line of Walnut st.

Erie, Pa.—Ordinance has been passed for grading, curbing and paving of Rose, Third to Fifth st.

Erie, Pa.—Resolution has been adopted for drawing ordinance for \$2,000 bond issue to build culvert on State st. south of Twenty-sixth st.

Harrisburg, Pa.—Ordinance has been passed to authorize opening and grading of Green st., from Woodbine st. to Emerald st.

Mendville, Pa.—Plans for improving Mead Park have been approved.

Scranton, Pa.—Establishment of municipal asphalt plant is being considered.

York, Pa.—Petition is being considered for paving of Cherry alley, between King st. and Newton alley.

Williamsport, Pa.—Select Council Bill No. 32, providing for paving of West Edwin st., from Center st. to Campbell st., has been passed.

Williamsport, Pa.—Bonds of Busch & Stewart for construction of Sixth st. pavement and Baldwin st. house sewer have been approved.

Woonsocket, R. I.—Resolution authorizing City Auditor to transfer balance of \$921.08 from Sayles st. bridge appropriation to appropriation for street repairing has been sent to Finance Committee.

Woonsocket, R. I.—Resolution appropriating sum of \$1,360 for macadamizing Woodland road has been passed, also resolution appropriating \$1,500 for macadamizing Lyman st.

Charleston, S. C.—Street Department is going to make experiment of paving with creosoted wood blocks and contract has been let for two sections of new material, one starting at end of vitrified brick pavement on King st., near Ann, and extending to Columbus, and other section on St. Phillip st., from Calhoun to Vanderhorst sts.

Chattanooga, Tenn.—Mayor has reported sale of \$45,000 bond issue to New York house. This issue was recently author-

ized for purpose of paving number of cross streets of city.

Knoxville, Tenn.—Members of Knox County Road Commission have decided to instruct County Engineer to make survey of road as to cost of regrading and pike this distance.

El Paso, Tex.—City Council has ordered election of taxpayers to be held Oct. 29 to vote on proposition of issuing \$50,000 of bonds for opening up new streets.

Hondo, Tex.—Citizens have voted to issue \$40,000 bonds for road improvements in Medina County.

San Antonio, Tex.—Creosote wood blocks will be used for paving East Commerce st., from S. Alamo to the Southern Pacific tracks.

San Marcos, Tex.—Plans are being made for construction of better sidewalks.

Smithville, Tex.—County Judge Joseph Price has sold \$100,000 worth of road bonds of Smithville road district No. 1 of Bishop County to Cincinnati firm. The Road Committee will have engineering done, making maps and profiles of road system. When completed they will begin work of building 50 or 60 miles of roads leading from Smithville in various directions.

Leesburg, Va.—At recent meeting of Mayor, Town Council and number of citizens of Purcellville, Loudoun County, resolution was unanimously adopted to petition Judge Edward S. Turner, of Circuit Court for Loudoun County, for order authorizing town of Purcellville to hold election on question of issuing bonds in sum of \$5,000 for purpose of more sidewalks, street lights and road building for town.

Leesburg, Va.—Judge Edward S. Turner, of Circuit Court for Loudoun County, has ordered election to be held in Purcellville, Nov. 16, on question of issuing bonds to sum of \$5,000 for purpose of more lights, pavements and macadamizing road for town.

Lynchburg, Va.—Petition has been received asking for improvements on Clay st., between Twelfth and Thirteenth sts., at cost of \$1,500.

Marion, Va.—Board of Supervisors has decided to ask Circuit Court of Smythe County, at the November term, 1912, to order election on question of issuing \$150,000 bonds for Marion Magisterial district, and \$75,000 similar bonds for St. Clair Magisterial district, of said county, for macadamizing and permanently improving roads of said district.

Norfolk, Va.—Berkley Committee has recommended placing granolithic sidewalk on Alleghany st., between Bath and Buchanan sts., and has asked City Engineer Brooke for cost estimates for similar improvements on several other streets.

Wheeling, W. Va.—It has been decided by Fulton Council to make many additional improvements to walks and streets of town. Large amount of curbing will be used in work of improvements. About 2,000 ft. of it is now on road, 1,500 ft. has already been set, and 700 ft. more is still to be let out by contract. High, Centre and Eighth sts. will be ones repaired first.

Seattle, Wash.—Plans for improvement of Railroad ave. by replanking and paving have been submitted to Board of Public Works by engineer's department and have been referred back to City Engineer for further investigation. Plans for improvement of Thirty-first ave. S. and Washington st. have been referred back to City Engineer for further attention.

Spokane, Wash.—Bids received for doing the Ash st. sidewalk job were above estimate, and work will probably be done by day labor.

Tacoma, Wash.—City has decided to pave Proctor st., from N. Thirty-eighth to 224 ft. north of north line of N. Thirty-eighth with asphalt, concrete base, brick gutters.

Ashland, Wis.—Town of Barksdale has voted \$5,000 bonds for road construction.

Monroe, Wis.—Greene County townships have voted road fund for next year amounting to \$22,000. County will appropriate an equal sum.

CONTRACTS AWARDED.

Birmingham, Ala.—For paving First ave., from Eighteenth to Twenty-first st., and on Twentieth st., from Railroad ave. to Fourth ave., with creosoted wood blocks, to McCartin Paving and Constn. Co., Birmingham.

Mobile, Ala.—For construction of about 8 miles of county highway on Moffatt rd., by Board County Commissioners of Mobile County, to the Jott Bros. Contr.

Co., at \$37,546.69. Work includes the construction of concrete bridges.

Burlingame, Cal.—By Board of Trustees, contract for paving, to Western Paving Co., for \$150,000.

Glendale, Cal.—To McCombs Bros. for improving Vine st., from Central ave. to San Francisco road, at 30 cts. per lin. ft. for grading, 3% cts. per sq. ft. for oiling and macadam, 21 cts. per lin. ft. for cement curb, 7½ cts. per sq. ft. for cement sidewalks.

Los Angeles, Cal.—By Board of Public Works for following improvements: Allison ave. (north side), from Douglas to 800 ft. northerly—Awarded to O. L. Stevens at 9.9 cts. a sq. ft. for sidewalk; aggregate, \$475.20. Catalina st., from Fifth to Sixth—Awarded to O. L. Stevens at \$5.50 a lin. ft. for grading and graveling; 35 cts. a lin. ft. for cement curb; 16 cts. a sq. ft. or cement gutter; 12 cts. a sq. ft. for sidewalk; \$450 for pipe and culvert; aggregate, \$5.466. Center st., from Aliso to First, and other streets—Awarded to Fairchild-Gilmore-Wilton Company at 17 cts. a sq. ft. for asphalt paving; 30 cts. a lin. ft. for cement curb; 40 cts. a sq. ft. for granite block gutter; \$2,530 for storm drains; aggregate, \$15,618.52. Fifth st., from New Hampshire to Catalina—Awarded to O. L. Stevens at \$1.75 a lin. ft. for grading and graveling; 35 cts. a lin. ft. for cement curb; 15 cts. a sq. ft. for cement gutter; 35 cts. a sq. ft. for vitrified block gutter; 11 cts. a sq. ft. for sidewalk; aggregate, \$3,049.20. Fifteenth st., from Long Beach to Morgan—Awarded to George R. Curtis at \$1.80 a lin. ft. for grading and graveling; 33 cts. a lin. ft. for cement curb; 14 cts. a sq. ft. for cement gutter; 11 cts. a sq. ft. for sidewalk aggregate, \$1,658.78. Mitchell place, from Fairview to Echandia, and portions of Gillette st. and Fairview ave.—Awarded to D. D. Chapman at \$2.15 a lin. ft. for grading and graveling; 5 cts. a sq. ft. for regrading, graveling and oiling; 35 cts. a lin. ft. for cement curb; 15 cts. a sq. ft. for cement gutter; 35 cts. a sq. ft. for vitrified block gutter; 11 cts. a sq. ft. for sidewalk; \$350 for storm drains; aggregate, \$5,355.20.

Los Angeles, Cal.—To H. H. Curtis, contract for improvement of Townsend st., from Sunset blvd. to Willoughby ave., by Board of Public Works, for sum of \$16,202.52.

San Bernardino, Cal.—By Highway Constrn. Co., of Redlands, at \$13,962 for oiling and construction of gutters on B st.

San Jose, Cal.—Ransome-Crummey Company was found to be lowest bidder for improving First st. to northerly city limits, as follows: Paving, 18 cts. a sq. ft.; gutters, 30 cts. a sq. ft.; curbing, 18 cts. per lin. ft.; catchbasins, \$40; drain pipes, 18 cts. per ft. Unsuccessful bidders were Barber Asphalt Paving Company and City Street Improvement Company.

Hartford, Conn.—For State road work, by State Highway Commissioner as follows: Town of Stafford, 4,704 lin. ft. graded road on Stafford turnpike, to Cornelio Bros., Winsted, Conn., for \$7,823; 4,565 lin. ft. grading on the same road in the town of Ellington to same contractors for \$10,775; 885 lin. ft. grading in Tolland to same contractors for \$1,669; 12,250 lin. ft. of grading in Willington to same contractors for \$22,311.85. These contractors also submitted a price of 85c. per lin. ft. for rubble drain and \$1.25 per lin. ft. extra for telford. Total contract price for these four sections is \$42,578.85. Other bidders and their prices for this work were Gary Bros., Stafford Springs, Conn., \$44,089.07; F. Arrigoni & Bro., Durham, Conn., \$45,000; A. D. Bernardino & Co., Hartford, Conn., \$57,099; Ahern Bros., Willimantic, Conn., \$64,969; A. Brazos & Sons, Middletown, Conn., \$64,995; Jones & Porcaro, Willimantic, Conn., submitted bids of \$18,863, \$15,630 and \$54,358, respectively, for the sections in Ellington, Stafford and Willington; Goodman & Trumbull, Litchfield, Conn., submitted a price of \$29,863 for the Willington section. For State road work, as follows: Town of Milford, 3,276 lin. ft. special macadam on New Haven ave., to C. W. Blakeslee & Sons, New Haven, Conn., \$2.85 per lin. ft. for special macadam, \$3.75 for telford, 70c. per sq. yd. for cobble gutters, \$2.25 per lin. ft. for rubble drain, \$6.25 per cu. yd. for concrete walls, \$6.50 for masonry walls, \$5 for dry rubble. Other bidders were E. N. Clarke, Milford, Conn., \$3.69, \$4.94, 80c., \$1.25, \$8, \$7, \$6. Daley Constr. Co., New Haven, Conn., \$3.25, \$4.25, 70c., \$2.50, \$10, \$10, \$10. Town of Bridgewater, 9,542 lin. ft. grading telford on the Bridgewater-Roxbury road, to B. D. Pierce, Jr., Co., Bridgewater, Conn., \$16,250 for the entire grading, 80c. per lin. ft. for

telford, \$1 per lin. ft. for rubble drain, \$8 per cu. yd. for concrete walls, \$7 for masonry walls, \$6 for dry rubble walls. Other bidders were the Torrington Constrn. Co., Torrington, Conn., \$19,000, 75c., \$1.25, \$8.50, \$5.50, \$4.50; Goodman & Trumbull, Litchfield, Conn., \$17,144, 80c., \$1.10, \$9, \$6, \$4.50; Caesar Rossi, Torrington, Conn., \$16,950, 90c., \$1, \$8, \$6, \$4.50; O. T. Benedict, Pittsfield, Mass., \$17,395, 70c., 35c., \$7, \$6, \$5; Pierson Engineering and Constrn. Co., Bristol, Conn., \$18,950, 90c., \$1.50, \$9, \$7, \$5. Town of Branford, a section of special macadam road on the Boston Post road, to Daley Constrn. Co., New Haven, Conn., \$3.40 for special macadam, \$4.40 for telford, 70c. per sq. yd. for cobble gutters, \$2.50 for rubble drain, \$10 per cu. yd. each for concrete, masonry and dry rubble walls. Town of Ridgefield, a section of gravel construction on the Danbury-Norwalk turnpike, to H. Sanford, Osborne, Redding, Conn., \$1.55 per lin. ft. for gravel, \$2.55 for telford, \$1 for rubble drain, \$8 per cu. yd. for concrete walls, \$6 for masonry walls, \$5 for dry rubble walls. Town of Seymour, 9,599 lin. ft. gravel road on the Ansonia turnpike, to E. N. Clarke, Milford, Conn., 80c. per lin. ft. for gravel, \$1.80 for telford, \$1.25 for rubble drain, \$8 per cu. yd. for concrete walls, \$7 for masonry walls, \$6 for dry rubble walls. Other bidders were Caesar Rossi, Torrington, Conn., \$1.40, \$2.40, \$1, \$8, \$6, \$4.50; O. T. Benedict, Pittsfield, Mass., \$1.25, \$1.95, \$1, \$7, \$6, \$5; Goodman & Trumbull, Litchfield, Conn., \$1.43, \$2.33, \$1.20, \$9, \$6, \$4.50; Joseph D'Aloia, Waterbury, Conn., 88c., \$1.70, 75c., \$10, \$6, \$4. Town of Danbury, 10,243 lin. ft. macadam on Lake ave., to John F. Knapp, Belden Hill, Conn., \$2.09 per lin. ft. for macadam, \$2.84 for telford, 90c. for rubble drain, \$6 per cu. yd. for concrete walls, \$5 for masonry walls, \$4 for dry rubble walls. Other bidders were Fred J. Kellogg, Danbury, Conn., \$2.85, \$3.25, \$1.50, \$8, \$5, \$4; Torrington Constrn. Co., Torrington, Conn., \$2.60, \$3.60, \$1.25, \$10, \$6, \$4.75; Caesar Rossi, Torrington, Conn., \$2.93, \$3.93, \$1, \$8, \$6, \$4.50; Goodman & Trumbull, Litchfield, Conn., \$2.70, \$3.70, \$1.25, \$9, \$6, \$4.30; O. T. Benedict, Pittsfield, Mass., \$2.49, \$3.19, \$1, \$7, \$6, \$5. Town of Durham, a section of gravel construction on the Durham-Guilford turnpike, to Frank Arrigoni & Bro., Durham, Conn., \$1.68 for gravel, 95c. per sq. yd. for cobble gutters, \$1.75 per lin. ft. for rubble drains, \$10 per cu. yd. for concrete walls, \$9 for masonry walls, \$7 for dry rubble walls. City of Bristol, 10,003 lin. ft. gravel construction on the Bristol-Farmington road, to O. T. Benedict, Pittsfield, Mass., \$1.25 per lin. ft. for gravel, \$1.95 for telford, 70c. per sq. yd. for cobble gutters, 95c. per lin. ft. for rubble drain, \$7 per cu. yd. for concrete walls, \$6 for masonry walls, \$5 for dry rubble walls. Other bidders were the Torrington Constrn. Co., Torrington, Conn., \$1.79, \$2.79, 75c., \$1.25, \$8.50, \$6, \$5; Curran Corporation, Middletown, Conn., \$1.58, \$2.28, 80c., \$1.10, \$10, \$8, \$6; City of Bristol, \$1.50, \$1.85, 60c., 30c., \$7, \$5.20, \$4; Pierson Engineering & Constrn. Co., Bristol, Conn., \$1.85, \$2.75, 90c., \$1.50, \$9, \$7, \$5. Town of Enfield, a section of macadam construction on the Thompsonville-Hazardville road, to A. E. Douglass, Glastonbury, Conn., \$2.45 per lin. ft. for macadam, \$5 for telford, \$2.50 for rubble drain, \$9 per cu. yd. each for concrete, masonry and dry rubble walls. Town of Killingly, 7,608 lin. ft. gravel construction on the Putnam-Attawaugan road to Goodman & Trumbull, Litchfield, Conn., \$1.70 per lin. ft. for gravel, \$2.60 for telford, \$1.20 for rubble drain, 9 per cu. yd. for concrete walls, \$6 for masonry walls, \$4.50 for dry rubble walls. Town of Milford, a section of special macadam construction on New Haven Ave., to C. W. Blakeslee & Sons, New Haven, Conn., \$2.50 per lin. ft. for macadam, \$3.40 for telford, \$2.25 for rubble drain, \$6.25 per cu. yd. for concrete walls, \$6.50 for masonry walls, \$5 for dry rubble walls.

Winsted, Conn.—By Highway Commissioner James H. Macdonald to Cornelio Brothers of Winsted, for following road work, all grading with trap rock surface: In town of Stafford, 4,707 lin. ft. at \$7.823; Ellington, 4,565 lin. ft. at \$10,775; Tolland, 285 lin. ft. at \$1.669; Willington, 13,250 lin. ft. at \$22,311.85.

Bayview, Ida.—For paving auto road, from Athol to Bayview, to Elmer Dole, of Post Falls.

Coeur d'Alene, Ida.—To Warren Constr. Co., contract for gravel bitulithic pavement here on bid of \$45,000.

Galesburg, Ill.—Contract for paving Ferris st., to J. E. McAuley, of Galesburg, for \$17,789.

Mattoon, Ill.—To Bresee & Brown, of Mattoon, contract for paving in Tenth

st. paving district, at \$22,642.

Eikhart, Ind.—For construction of sidewalks on Nobel st. has been awarded to F. W. Hillman, at 7.94 cts. per sq. ft. The contract for the construction of sidewalks on Rice st. was awarded to F. W. Hillman at 8c. a sq. ft.

Michigan City, Ind.—By Board of Public Works, contract for paving of Seventh, Eighth and Ninth sts., between Huron st. and Willard ave., as follows: Seventh st. contract was let to Western Constrn. Co., of Lafayette, asphalt macadam, while J. C. Devine Co., of Alliance, O., will build other two streets, brick being material selected.

South Bend, Ind.—By Board of Public Works for construction of pavement of Wayne st. to Hoba & Roach, at \$4,073.42.

Hamburg, Ia.—By City Council, for 50,000 sq. yds. bituminous concrete, to Asphalt Paving Co., of Waterloo, at \$1.65 per sq. yd., and 69 cts. per lin. ft. for curb and gutters.

Marshalltown, Ia.—By City Council, for contract for 33,000 sq. yds. bitulithic paving in Marshalltown, to Waterloo Paving Co., at \$1.65 per sq. yd.

Louisville, Ky.—By Board of Aldermen for constructing of sidewalks on various streets, to A. L. Figg, American Concrete Constrn. Co., & Edwin S. Larson.

New Orleans, La.—To Standard Paving & Constrn. Co., at \$14,860, for paving of portion of Peters st. with Sicilian rock asphalt.

Baltimore, Md.—On paving contract No. 41 lowest bid was submitted by Filbert Paving & Contracting Co., which quoted \$1.33 per sq. yd. for bituminous concrete called for by specifications. Padgett bid \$1.42 per sq. yd., while the United States concern bid \$1.54 per sq. yd. Bids also were opened for Paving Commission contract No. 40, calling for vitrified brick and Belgian block. There were only two bidders, Standard Contracting Co. apparently underbidding Cunningham Paving & Contracting Co., of Philadelphia. On vitrified brick, which will be laid on all of streets in contract, except one, Standard Co. bid \$2.11 per sq. yd., and on Belgian block, \$3.50. The Cunningham Co. bid \$2.37 per sq. yd. for vitrified brick and \$3.44 on Belgian block.

Baltimore, Md.—By State Roads Commission as follows: Chesapeake Constrn. Co., road from Boston to Dover Bridge, \$25,880.60; Snow Hill, toward Pocomoke City, Chesapeake Constrn. Co., \$21,511.40; Belcamp road, in Hartford County, Thomas C. Forsythe, \$14,819.05; Wesley Chapel road, in Hartford County, Thomas C. Forsythe, \$11,585.

Albert Lea, Minn.—To Albert Lea Constrn. Co., contract for curbing Summer, Lake View blvd. and other streets, for \$7,592.

Blackduck, Minn.—To Ross Noble, contract to build road between towns of Birch and Taylor, at \$1,400.

Gulfport, Miss.—By Harrison County Board of Supervisors, for 3 miles of road, leading into Long Beach, for \$1,000, to Hallis Taylor.

Kansas City, Mo.—For concrete paving, as follows: To Edward Meegan, for Flora ave., 9,253 sq. yds., at 98 cts. per sq. yd., and to J. E. Welch, for Baltimore, Montgall and Agnes aves., 9,693 sq. yds., 99 cts., \$1.05 and 98.99 cts. per sq. yd. respectively.

Great Falls, Mont.—For construction of proposed bitulithic pavement on Third ave., north between Sixth and Seventh aves., to Warren Constr. Co. at \$4,015.98.

Ocean City, N. J.—By Cape May County Board of Freeholders, for Ocean City blvd., to Senator Robert E. Hand, whose bid was \$87,986.63. The boulevard will run from Thirty-fourth st., this city, to Marmora, little more than two miles. Work is to be done by June 15.

Paterson, N. J.—To George F. Brackett, of Ridgewood, to pave Falls road with Mexican asphalt about 15,000 yds. for about \$32,000. T. J. Harder is City Engineer.

Union, N. J.—By Town Council to Edward P. O'Neill, 576 Newark ave., Jersey City, N. J., at \$18,483, for improving Fifth st. The Standard Bitulithic Co. at \$19,031, was another bidder.

Syracuse, N. Y.—Contracts have been awarded for number of sidewalks and for following improvements: Paving W. Belden ave., from N. Geddes st. to Liberty st., Guy B. Dickison, \$5,918.20; installing heating and ventilating system at the Municipal Baths, D. R. McCarthy, \$3,630; furnishing the Park Commission with stoneware pipe, Robinson Clay Products Co., \$2,249; 8-in. pipe sewer in N. Clinton st., James Swift, \$1,591.50.

Cincinnati, O.—George W. Rich submitted bid of \$10,375 for making improvements on Union Cemetery road and same was accepted.

Columbus, O.—By State Highway Department, for grading and paving with brick for medium traffic, Chester road, State Highway "G" pet. No. 647 in Chester Township, length 5,280 ft. or 1 mile, to George E. Bowers, Middleport, O., at \$9,760.50. Also for grading and paving with waterbound macadam having bituminous surface treatment, Columbus road, State Highway "C" pet. No. 606, in Perkins Township, length 5,300 ft. or 1 mile, to F. X. Riedy, Castalia, O., at \$3,999. James R. Marker, State Highway Comr.

Urbana, O.—By County Commissioners, contract for improvement of Springfield and Urbana pike, to James Sheedy for the sum of \$980. Over a mile of road is to be improved.

Okmulgee, Okla.—By Board of City Commissioners to Levy & Levy, Muskogee, Okla., at \$1.60 per sq. yd. for paving with Bermudez asphalt in District No. 2. Other bidders were the Parker-Washington Co. and the Shelby-Downard Asphalt Co.

Portland, Ore.—For following street work: Paving of E. Tenth st., to the Barber Asphalt Paving Co., at \$22,231; Halsey st., to the Oregon Hassam Paving Co., at \$38,042, and with bitulithic, Tremont st., to Pacific Bridge Co., for about \$75,000.

Erie, Pa.—To Mayer Bros., for paving Ash st., Fifteenth to Eighteenth st.

Erie, Pa.—By city, for asphalt pavement in Fourteenth st., between German and Parade, to John McCormick & Son.

Greensburg, Pa.—For paving Highland ave., to James H. Offutt, of Greensburg, for about \$15,000.

Harrisburg, Pa.—By State Highway Commissioner E. M. Bigelow as follows: Cumberland County, Upper Allen Township, 11,100 ft., Thomas Meehan & Sons, Philadelphia; Potter County, Pike Township, 3,900 ft., and Galetton Borough, 6,283 ft., E. W. Halen, Towanda; Jefferson County, Punxsutawney, 3,271 ft., Bennett & Shearer, Indiana; Clearfield County, Osceola Borough, 3,119 ft., Baker-Owen Constn. Co., Johnstown; Indiana County, Indiana Borough, 2,854 ft., and White Township, 8,894 ft., M. Bennett & Sons, Indiana.

Harrisburg, Pa.—Central Constrn. and Supply Co. was only bidder for paving jobs opened by Highway Commissioner. The paving bids are as follows: Atlas, Maclay to Woodbine, paving, sq. yd., \$1.85; curbing, granite, 85 cts. Fifteen ft. wide alley, Camp alley, Camp to Emerald, \$1.80 and 85 cts.; Geiger, Second to Fifth, \$1.85 and 85 cts.; Howard alley, Camp to Emerald, \$1.80; Prune, Mulberry to Berryhill, \$1.85 and 85 cts.; Second, Woodbine to Emerald, \$1.85 and 85 cts.; Summit, Derry to Mulberry, \$1.85 and 85 cts. For grading of Greenwood st., between Nineteenth and Twenty-third, the Stucker Bros. Constn. Co. was low. Its bid was \$1,660, while that of Central Constrn. & Supply Co. was \$1,700.

Newport News, Va.—To D. J. Phipps, local contractor, for road construction work in Wise County aggregating \$125,000. The roads, totaling about 20 miles, are to be built of crushed stone.

Moundsville, W. Va.—For improving Loudenville road, to W. A. Kidder.

Wheeling, W. Va.—By Board of Control, contract for repairing the National road over Wheeling Hill, to Pickett & Shanefelt, of Bellaire, at \$9.20 per cu. yd. Work includes repairing of landslides which occurred last winter.

Everett, Wash.—Two important street improvement contracts have been awarded by City Commissioners, and bids received from contractors were comparatively close. Thoroughfares included in this new work were Oakes ave., between Sixteenth and Twenty-second sts., and E. Grand ave., from Twenty-first to Twenty-fourth sts., and Twenty-second st. and Twenty-third st., each from Summit to E. Grand aves. On Oakes ave. project award was made to F. K. Ffolliott with a bid of \$7,895. Other bidders on this work were: Atlas Constn. Co., \$8,342, and Walsh & Christenson, \$7,924.23. E. Grand ave. work was awarded to Walsh & Christenson at \$12,918.54, while Atlas people submitted a bid of \$12,985, and Ffolliott \$13,211.60. First named improvement consists of laying cement walks, concrete curbs and preparation for complete drainage system; E. Grand ave. work represents grading and the laying of cement sidewalks and concrete curbs and gutters.

Spokane, Wash.—Contract for paving of Boone st., to Bitu-Mass Paving Co., on bid of \$34,450.

Spokane, Wash.—By City Council, contract for grading and curbing Crown

ave., Standard to Division st., to C. M. Payne at \$3,900. Estimate on work was \$4,200.

Spokane, Wash.—For curbing and sidewalk Eleventh ave., Ivory to Arthur st., lowest bid was submitted by J. B. Mitchell at \$1,397.

Regina, Sask.—For following street improvements: for 24,000 sq. yds. bitulithic paving to Bitulithic Paving Co., at \$3 per sq. yd., 10,000 sq. yds. asphalt paving to the National Paving Co., at \$2.90 sq. yd.; 8,000 lin. ft. combined curb and gutter to Western Pavers Ltd., at 74 cts. ft.; 235,000 sq. ft. concrete sidewalk to Parsons Construction Co., at 17 cts. sq. ft.

SEWERAGE

Gadsden, Ala.—Construction of more sewers is being considered.

Hartford, Conn.—Finance Board has recommended passage or additional appropriation of \$1,200 for city's share in construction of new sewer from Broadview terrace across private lands to New Britain ave.

Los Angeles, Cal.—Construction of sewers in various streets has been planned.

San Jose, Cal.—Clerk has been instructed to advertise for bids for construction of sewers in San Fernando st., from Pleasant to the northerly city limits, in East st., from San Fernando to Park ave., and in Lick ave., from Willow to Goodyear.

Washington, D. C.—Active preparations for mapping out plan for installation of proper sewer disposal facilities in Maryland communities that drain into Rock Creek and Anacostia Valleys probably will be begun within next 10 days or two weeks by committee appointed for that purpose.

Cairo, Ill.—City will be ready in a few days to receive bids covering work necessary to repair breaks which have developed in main sewer of city. Principal item is about 450 ft. of 6-ft. concrete sewer, with various street connections. W. Robert Cameron is City Engineer.

Burlington, Ia.—Resolution has been passed to construct 8-in. vitrified pipe sewer, extending from present sewer in Alley No. 8 to center of Alley No. 8 and Ash st.

Clinton, Ia.—Plans have been filed for construction of sewers in District No. 9, which is that part of Lyons north of Main st. Estimated cost of the City Engineer for this work is \$23,689.59.

Manning, Ia.—Council has voted to install complete sewer system.

Attleboro, Mass.—Attleboro has awarded issue of \$75,000 4 per cent. sewer bonds to Estabrook & Co.

New Bedford, Mass.—Committee on Roads, Bridges and Sewers has recommended construction of four sewers, and appropriations have been made for the work.

Blackduck, Minn.—Council has adopted resolution for sewer in Main st., about 1,670 ft.

Duluth, Minn.—City Engineer has been directed to prepare estimates of storm sewer in Twentieth ave., west from Piedmont ave., to Northern Pacific tracks. Petition for a sanitary sewer in Duluth Heights has been received.

Tekamah, Neb.—Plans for sewer system have been secured by City Council and question of issuing bonds will be taken up shortly.

Plainfield, N. J.—Question of locating joint sewerage disposal plant for Plainfield, North Plainfield and Dunellen is being discussed by State Board of Health.

Brooklyn, N. Y.—Petitions have been received asking for construction of sewers in various streets.

Elmira, N. Y.—Question of constructing sewage disposal plant is being considered. Contract will shortly be let for 24-in. tile sewer.

New Hartford, N. Y.—Village is said to be considering construction of sewage disposal plant.

Rochester, N. Y.—Board of Contract and Supply has rejected bids for sewer walks and grading in Gale terrace. Bid of Whitmore, Rauber & Vicinus was low on sewer and asphalt pavements in Loyer place, but bid was in excess of estimated cost.

Rochester, N. Y.—City Engineer Edwin A. Fisher has stated that plans for construction of sewage disposal system as prepared call for construction of plant for development of power by effluent from plant.

Utica, N. Y.—Board of Contract and Supply has adopted plans and specifications for relief storm water sewer across private property in Lincoln ave., 77 ft.

north of catch basin at foot of Tracy st., to Nail Creek, in McVean st., from Nail Creek to Stark st., in Green to Knox st., in Knox st., from Stark st. to West ave., and in Green st., from Stark to Schuyler sts.

New Bern, N. C.—R. R. Eagle has just completed survey for sewerage system for Riverside. Six thousand feet of piping will be used in this work and bids for work will be advertised at early date.

Raleigh, N. C.—Board of Aldermen has provided for \$45,000 loan, \$2,500 of which will be used for extension of sewerage system.

Erie, Pa.—Borough Council has voted to have Pittsburg engineers plan new sewer system and sewerage disposal plant that will keep house drainage from entering French Creek, running through town.

Erie, Pa.—Ordinance has been passed providing for 9-in. sanitary sewer in Twentieth st., Wayne to Perry sts., and in Perry, Twentieth st., south.

Farrell, Pa.—At meeting of Farrell Council borough hired L. E. Chapin, civil and consulting engineer of Pittsburgh, to draw up plans and specifications for sewerage disposal plant and system, borough to make its own survey.

Farrell, Pa.—Action has been taken to hasten completion of plans for joint sewerage disposal plant for Sharon and Farrell. Each borough will proceed separately to have its sewerage system plans for coupling up of its sewers completed.

Harrisburg, Pa.—Plans for intercepting sewer have been accepted by Board of Public Works and Park Commissioners and bids will be asked for same.

South Bethlehem, Pa.—Ordinance is being considered signifying desire of corporate authorities of Borough of South Bethlehem to increase indebtedness of borough for purpose of building a sewerage disposal plant, pumping station, force main and trunk sewer.

Anacostia, S. C.—Construction of sewer is desired on Minnesota ave., from Eighteenth st. to Naylor road.

Sioux Falls, S. D.—Resolution has been passed to construct lateral sewers to connect with main trunk sewers of city.

El Paso, Tex.—City Council has ordered election of taxpayers to be held Oct. 29 to vote on proposition of issuing \$150,000 of bonds for extending sewer mains.

Polytechnic, Tex.—Polytechnic City Commissioners will be petitioned to set date for holding election, when it will be determined whether Polytechnic shall issue bonds to provide for establishment of sewerage system.

Temple, Tex.—Election may shortly be held to vote on purchasing plant of Temple Sanitary Sewer Co. and expending \$25,000 for extensions, and improvements to plant.

Seattle, Wash.—City Engineer's recommendation that plans for Brooklyn ave. sewers be changed to provide for outlet into trunk sewer at Ravenna Boulevard has been adopted. This change will lower cost of improvement about \$2,000.

Bangor, Wis.—Bonds have been voted for constructing sewer system. Cost complete, about \$20,000.

Fond du Lac, Wis.—State Board of Health has approved plans and specifications for proposed sewage disposal plant to be installed on site of present septic plant north of Scott st. Engineer is W. S. Shields, of Chicago, Ill.

CONTRACTS AWARDED.

Tuscaloosa, Ala.—By city, contract for laying 8 and 10-in. sanitary sewers, to Tuscaloosa Concrete & Supply Co., of Tuscaloosa, for \$6,100.

International Falls, Minn.—To Fraser & Danforth, of St. Paul, contract for extending sewer on Second st. and Ninth ave.

South Bend, Ind.—By Board of Public Works, for construction of sewer of Sorin st. to Hoban & Roach, at \$1,501.50, and sewer on Liston st., to De Paepe & Cousens, at \$429.70.

Baltimore, Md.—William McCarthy & Son are apparently lowest bidders for sanitary sewerage contract No. 23. The Whiting-Turner Constn. Co. is believed to be next lowest bidder.

Baltimore, Md.—By Board of Awards for construction of Section 7 of high level interceptor, Sanitary Contract No. 102, to C. Bevan Clark, 180 Greenmount ave., Baltimore, at \$117,503. Approximate quantities, 4,420 lin. ft. brick and concrete 52-in. sewer; 13,250 ft. of trench excavation; 1,920 ft. of excavations.

tion in tunnel; 505 cu. yds. of brick masonry sewer; 3,650 cu. yds. of concrete masonry; 390,000 ft. of B. M. timber left in trench; 1,700 lin. ft. of c-i. and vitrified pipe house connections. Board also awarded contract for construction of sanitary sewers, Contract No. 103, to Ryan & Reilly Co., 612 Union Trust Bidg., Baltimore, at \$38,733; approximate quantities, 2,100 lin. ft. of 30-in. sewers, 1,200 lin. ft. of vitrified pipe 8-in. sewers, 1,650 ft. of vitrified pipe house connections.

Baltimore, Md.—On Sanitary Contract No. 100 lowest bid was received from Lane Bros. Co., of Baltimore, at \$400,772. Ryan & Reilly's bid was \$454,570.50. On Contract No. 101 lowest bid was that of Standard Lime & Stone Co., of Baltimore, at \$487,850. Other bidders as follows: Ryan & Reilly, Baltimore, \$25,525; Janon Fisher, Baltimore, \$531,650; Sanford & Brooks, Baltimore, \$536,550. On Contract No. 102 lowest bid was received from C. B. Clark & Co., Baltimore, at \$117,503.10. Other bids as follows: James Ferry & Sons, \$124,551.50; Ryan & Reilly, \$128,966; Whiting-Turner Constn. Co., \$130,663.55. On Sanitary Contract No. 103 lowest bid was received from B. P. Sweeten & Son, Baltimore, at \$31,933.75. Other bids as follows: Ryan & Reilly, \$38,733.63, and James Ferry & Sons, \$39,317.25. On Storm Water Contract No. 23, lowest bid was received from Wm. McCarthy & Co., at \$5,990.27. Other bids as follows: Whiting-Turner Constn. Co., \$7,593.03; Ryan & Reilly, \$7,818.10; W. H. & C. F. Thompson, \$8,250.40. Calvin W. Hendrick, Chief Engineer.

Princess Anne, Md.—To Pusey & Allen for sewerage system in Princess Anne.

Boston, Mass.—To Carmin Russo, for sewer work in Blue Hill ave, Harvard and Barnyrmore sts., for \$6,519; also contract with M. De Sisto & Co., for West Roxbury low level sewer, for \$40,313.

Mitchell, Neb.—By village, contract for constructing sewer system, to C. Walker & Son, of North Platte, for \$7,271.

Binghamton, N. Y.—To Erwin D. Baker, of Binghamton, contract for constructing Sixth Ward sewer, for \$7,356.

Dunkirk, N. Y.—For constructing about 2½ miles of vitrified pipe sewer, comprising 20, 15, 10 and 6-in. pipe, to Meister Co., for \$12,306.

Steubenville, O.—By city, contract for constructing sewers, to F. H. Patterson, S. Fourth st., for \$4,139.

Urbania, O.—Contractors Boyd & Cook, of Dayton, have furnished bond in sum of \$40,000 to guarantee fulfillment of their contract for installation of sewerage system in Urbania.

Portland, Ore.—Hereafter no contracts for sewers will be awarded on defective bids. This decision has been made by the Sewer Committee of the Executive Board. In accordance with the decision, bid of William Lind to construct Lambert District sewer for \$64,222 was rejected because it contained slight error and contract was awarded to James Kennedy Constn. Co. for \$65,750. Several other low bids for construction of small sewers which contained slight mistakes also were rejected and contract awarded to higher bidder.

Erie, Pa.—By city, to John McCormick & Son, for sewer in Third st., Wallace st. west for 300 ft.

Harrisburg, Pa.—J. A. Stucker was lowest bidder for construction of sewer in Eighteenth st. from Wayne to Revere. His bid was \$724 as against \$850, that of Central Constn. & Supply Co.

Sioux Falls, S. D.—To A. L. Jones, for sanitary and storm water sewers in district No. 6, at \$14,000 and \$1,477. Other bids: Dearborn & Jackson, \$15,750 and \$1,477.

Jackson, Tenn.—For constructing sanitary sewers, approximately 39,238 lin. ft. 12, 8 and 6-in. pipe, 168 manholes, 4 flush tanks, to Ideal Plumbing Co., of Milwaukee, Wis., for \$29,555.

WATER SUPPLY

Arkansas City, Ark.—Committee has been appointed to investigate cost, etc., of water works, sewers and electric light plant.

Pasadena, Cal.—Council has instructed City Clerk to advertise for new bids for remaining part of water bond issue, unsold.

Riverside, Cal.—Engineers Burns & McDonnell, of Kansas City, Mo., have recommended purchase of three water companies in Riverside, and also improvements to cost \$342,080. These include a 3,000,000-gallon capacity reservoir pumping station, 2 high line reservoirs of half million gallons capacity, 280 new hydrants, etc.

Suisun, Cal.—Town Trustees have decided to call special election to vote

upon proposition to issue bonds to raise money to build about 2 miles of pipe line for municipal water system to replace old pipe, which has outlived its usefulness, and City Attorney C. J. Goodell has been instructed to prepare preliminary papers for calling election.

New London, Ia.—There is said to be a movement on foot for installation of water works system.

Decatur, Ind.—City Council has authorized engineer to prepare plans and specifications for erection of large reservoir at city plant. It will be a huge cement job.

Goshen, Ind.—All consumers have been ordered to install meters. About 800 will be needed.

Belle Plaine, Kan.—Belle Plaine has voted bonds for water works and electric lights.

Bennington, Kan.—Bennington has voted \$15,000 bonds to erect water works plant.

Mulberry, Kan.—At meeting of City Council resolution was passed calling election for purpose of voting municipal bonds for erection of water and light systems for city. Proposed plants will cost about \$60,000.

Winfeld, Kan.—Ordinance has been passed appropriating \$9,100 for purchase and installation of new pumps at water works.

Lafayette, La.—Council has ordered water system placed on meter basis Nov. 1.

Agawam, Mass.—City has awarded \$30,000 water bonds to Adams County at 100,179.

Holyoke, Mass.—At meeting of Water Commissioners it was decided to start work on laying of water pipe to north end section of city, between South Hadley and Fairview.

Delano, Minn.—Council is considering construction of water works.

Chester, Mont.—Citizens are said to have voted in favor of bond issue for water works.

Atlantic City, N. J.—New propositions for concrete water main across meadows have been presented to Commissioners by Mason D. Pratt, well known civil engineer of Harrisburg.

Pitman, N. J.—After being agitated for several months question of municipal ownership of water system here is to be submitted to voters at special election set for Nov. 26 as result of action taken by Borough Council. It adopted resolution which provides that vote shall be upon question of whether or not municipality shall purchase two private plants now in operation. Combined purchase price has been fixed at \$100,000.

Asheville, N. C.—Plans are being prepared by City Engineer B. M. Lee for new 10-in. pipe line from College st. to new hotel, about 6,000 ft.

Fulton, N. Y.—Common Council has received two bids on bond issue for extension of water main from pumping station beyond the Salisbury road. Douglass, Fenwick & Co., of New York, were successful bidders. Their bid was \$25,443.00.

Dayton, O.—Bids have been opened in office of Service Director Hoglen for two boilers for pumping station and water meters for use of city during next 12 months. There were but two bidders on boilers, these being Babcock & Wilcox of Cincinnati, who submitted bid of \$12,816, and Keeler of Williamsport, Pa., who made proposition of \$14,841. Contract involved removal of old boilers and their replacement by two new ones, first mentioned company offering to furnish boilers for \$11,553 and work and material for \$1,263, latter proposing to furnish boilers for \$13,241 and work and material for \$1,600. On annual contract for meters for use of city, Henry R. Worthington of New York bid \$5.85 for five-eighths inch meters, \$8.50 for three-fourths inch, and \$11 for one-inch meters.

Hamilton, O.—Erection of six standpipes around Central Block is being considered.

Salem, O.—Bids will be readvertised for building of addition to waterworks plant.

Springfield, O.—Ordinance has been passed providing for bond issue of \$17,000 for improving water works system.

Bartelsville, Okla.—Extensive improvements will be made to water system.

Locke, N. Y.—For construction of waterworks to (2) Martin & Stuart, Kensington, Pa., at \$8,614.50. Totals of other bids as follows: (1) John Siegrist, Utica, N. Y., \$8,582.85; (3) Gaffey & Byrne, Syracuse, N. Y., \$8,974.60; (4) C. R. Simpson, New York City, \$9,079.95; (5) Dallard Cons. Co., Syracuse, N. Y., \$9,547.45; (6) P. R. Kiley, Syracuse, N. Y., \$10,040. Itemized bids as follows:

Quantity.	Items.	(6)	(3)	(2)	(5)	(4)	(1)
		Rate.	Rate.	Rate.	Rate.	Rate.	Rate.
1,240	lin. ft. trenching and laying 4" c-i. pipe	\$0.30	\$0.24	\$0.25	\$0.40	\$0.25	\$0.30
6,500	lin. ft. trenching and laying 6" c-i. pipe	.37	.29	.30	.43	.27	.30
1,300	lin. ft. laying and calking (Gulf) 6" c-i. pipe	.26	.29	.30	.38	.30	.30
13	setting hydrants (each)	5.00	2.00	3.00	3.75	4.00	2.00
2	setting 4" valves (each)	3.00	1.00	2.00	3.00	1.50	1.00
5	setting 6" valves (each)	4.00	1.00	2.50	3.00	3.00	1.00
2	setting 8" & 10" valves (each)	4.00	2.00	3.00	3.75	3.50	3.00
15	tons furnishing 4" c-i. pipe	28.00	25.00	28.00	25.50	29.50	25.75
135	tons furnishing 6", 8" & 10" pipe	27.00	25.00	26.30	25.50	26.00	24.50
6,000	lbs. furnishing special castings	.03	.02 1/4	.03	.02 1/2	.03	.03
153	tons hauling pipe and specials	1.00	1.00	.50	.40	.90	.70
13	furnishing hydrants (each)	25.00	22.00	25.00	23.00	23.00	23.00
2	furnishing 4" valves (each)	7.00	6.00	7.00	6.50	6.90	6.00
5	furnishing 6" valves (each)	11.00	11.00	11.50	10.00	11.50	10.00
1	furnishing 8" valve	17.00	15.00	18.00	17.00	18.35	16.00
1	furnishing 10" valve	25.00	25.00	26.00	25.00	27.00	22.00
7	furnishing valve boxes (each)	5.00	3.00	3.50	4.00	3.30	3.00
13	furnishing corp. cocks, tap and connection (each)	5.00	5.00	5.00	7.00	5.00	5.00
90	Portland cement in place	15.00	15.00	3.00	9.00	15.00	10.00
50	furnishing bolts & clamps (set, ea.)	3.00	2.50	1.25	3.00	2.00	2.00
22	cu. yds. rock excavation	3.00	3.00	4.00	3.00	5.00	3.00
3	furnish expansion joints (each)	25.00	25.00	25.00	15.00	20.00	25.00
1	clearing reservoir (lump sum)	250.00	200.00	200.00	50.00	110.00	200.00
1	strainer at intake	1.00	15.00	....	5.00	44.00	25.00

Alternate Bids, if Universal Pipe Is Used.

1,240	lin. ft. trenching and laying 4" universal pipe	.29	.21	.25	.40	.21	.25
6,500	lin. ft. trenching and laying 6" universal pipe	.36	.26	.30	.43	.23	.25
1,300	lin. ft. trenching and laying 6" universal pipe	.26	.26	.30	.38	.28	.25

Quantity.	Items.	(1)	(2)	(3)	(4)	(5)
15	tons 4" c-i. pipe	....	....	\$28.20	....	\$26.00
135	tons 6", 8" and 10" c-i. pipe	....	....	25.20	....	24.90
6,000	lbs. special castings	....	....	.025	....	.025
13	hydrants (each)	\$23.50	\$23.50	....	\$22.50	22.50
2	4" valves (each)	7.00	6.80	....	6.00	7.00
5	6" valves (each)	10.50	11.25	....	10.00	11.00
1	8" valve	16.80	12.00	....	16.00	17.00
1	10" valve	23.50	25.00	....	21.50	24.00
7	valve boxes (each)	3.00	3.00	....	2.85	3.00
3	6" expansion joints (each)	....	....	....	....	18.00
1	strainer at intake	....	....	....	....	25.00

Morris & Farrington, Inc., Engineers, Syracuse, N. Y.

Beaverton, Ore.—At special election of town of Beaverton proposition of bonding town for \$12,300 for city water carried by decisive vote of 69 to 13. Plant will be installed immediately.

Coatesville, Pa.—Plans are being prepared by Alex Potter, 114 Liberty st., New York, N. Y., for proposed water works.

Homestead, Pa.—Homestead Council is discussing water question. Some want borough to purchase water from South Pittsburg Water Co., at rate of 7 cts. per 1,000 gallons. Others advocate municipal filtration plant, costing about \$95,000.

Mount Joy, Pa.—Mount Joy will erect \$15,000 filtration plant, adjunct of its water works.

West Chester, Pa.—It is said that water mains will be laid on N. Walnut st.

El Paso, Texas.—City Council has ordered election of taxpayers to be held Oct. 29 to vote on proposition of issuing \$200,000 of bonds for extending waterworks distributing system, \$150,000 for extending the sewer mains and \$50,000 for opening up new streets.

Harrisonburg, Va.—In order to provide more water for town of Harrisonburg and avoid water famines, authorities are considering plans for erection of storage reservoir which will have capacity of 5,000,000 gallons of water. Present storage reservoir holds only 800,000 gallons.

Norfolk, Va.—Committee has approved appropriation of \$596.97 for water taps and mains in Church st.

Spokane, Wash.—John Vergoli has been granted franchise to install water works system to supply Sunnyside.

Spokane, Wash.—Council has adopted emergency resolution providing for purchase of 195 valves for water department at \$3.83 each, without advertising for bids.

New London, Wis.—Plans have been prepared for water supply at cost of about \$15,000.

CONTRACT AWARDED.

Holville, Cal.—To Walker Bros., of El Canto, contract at 14½ cts. per cu. yd. for constructing 5 miles of canal for the Imperial Water Co. Work will require approximately 300,000 cu. yds. excavation.

Porterville, Cal.—To Concrete Pipe Co. of Porterville, for installing 6-mile unit of 10-in. concrete pipe for Lindsay-Rockford properties.

Monte Vista, Cal.—For completion of Terrace irrigation project in Rio Grande and Conejos Counties, which is being constructed at cost of approximately \$500,000, to Midwest Eng. Co., by Field, Fellows & Hinderlider Eng. Co., which is in charge of the construction. Work includes construction of laterals, headgates and distribution system.

South Bend, Ind.—Council has ratified contracts for water works improvements in Leeper Park to cost \$12,800. The suction well, which will be 20 ft. in diameter and 40 ft. deep, will be built by the Metal Concrete Chimney Co., of St. Louis, Mo., at cost of \$8,900.

Kansas City, Kan.—For building new concrete settling basin to the J. W. Ferguson Company at \$63,969.

Agawam, Mass.—To haul and lay 19,000 ft. of 8-in. c.i. pipe to John Bowes, Cohoes, N. Y., at 26 cts. per lin. ft.

Glen Gardner, N. J.—To construct water system at state tuberculosis sanatorium at Glen Gardner, to Richard Hafeman, Howell, N. J., at \$10,000.

Jamestown, N. Y.—Bids for cast iron pipe and specials were opened by Chester & Fleming engineers, Pittsburgh, as follows: Warren Foundry & Machine Co., 24-in. and 16-in. diameter, \$24.50 per ton, 2½ cts. for specials; Charles Millar Son Co., Utica, N. Y., pipe, \$25.20, specials 2½ cts.; Donaldson Iron Co., Emmaus, Pa., \$23.20 and 2½ cts.; R. D. Wood & Co., Philadelphia, Pa., \$24.50 and 2½ cts.; U. S. Cast Iron Pipe & Foundry Co., \$21.90 and \$22.90 and 2½ cts. Last named firm was awarded contract.

Locke, N. Y.—To Martin & Stewart, of Kensington, Pa., contract for construction of village water works system, on bid of \$8,615. Other bids were: Gaffey & Byrne, Syracuse, \$8,975; Dollard Const. Co., Syracuse, \$9,548; C. R. Simpson, New York, \$9,080, and P. R. Kiley, Syracuse, \$10,040.

Columbus, O.—By Department Public Safety, contract for fire hydrants, to J. C. Hearn Machine Works.

Dayton, O.—It seems probable that contract for meters will be awarded to Buffalo Meter Co., whose bids were lowest on ½ and ¾-in. meters, although slightly higher than one of its competitors on 1-in. meters. On ½-in. meters

bid of Buffalo company was \$5.60 for not fewer than 1,500, or \$8,400 in aggregate, and on ¾-in. meter, bid was \$8.40 per meter, with no fewer than 150, or aggregate of \$1,260. On 1-in. meter, the bid of Henry R. Worthington was \$11 per meter for not fewer than 50, while bid of Buffalo company was \$11.20.

Polk, Pa.—By State Institution for Feeble-minded, at Polk, to R. C. Huntsman Co., of Pittsburgh, contract for electric pumping station and transmission line, from plans of Chester & Fleming, Union Bank Building, Pittsburgh, at the following bid: Pump station intake and 2 high-service pumps, \$7,668; 6,000 lin. ft. transmission line, 42 cts.; 25 cu. yds. Class B extra concrete, \$6.50; 50 cu. yds. extra earth excavation, \$1.25.

Souderton, Pa.—For constructing water works, to Joseph L. Sveigard & Co., of Philadelphia, for \$9,070.

Cheraw, S. C.—By Public Works Commission, contracts for constructing water works and sewers as follows: For laying about 7 miles of water mains and sewers, to Dixie Constr. Co., Burlington, N. C.; pumping station and filter, to Tucker & Layton, of Charlotte, N. C., and for tower and tank, to Des Moines Bridge & Iron Co., of Des Moines, Ia.; total cost about \$95,000.

St. George, S. C.—For constructing water system here, according to plans prepared by J. Newton Johnson, Consultant Engr., Florence, S. C., as follows: Laying pipe, constructing pump house and reservoir, to Berghaus & Fairey, at \$6,000; furnishing pipe and specials, to the U. S. Cast Iron Pipe & Foundry Co., Chattanooga, Tenn., at \$8,000; furnishing hydrants and valves, to the Columbian Iron Works; furnishing pumps and compressor, to the Piatt Iron Works; constructing tank and tower, to the Des Moines Bridge & Iron Co., at \$3,380; furnishing boilers, etc., to the Casey Hedges Co.

Woodland, Wash.—To Dinnis & Christensen, of McMinnville, Ore., for construction work of water works system at \$9,916.

LIGHTING AND POWER

Mobile, Ala.—Dr. H. B. Rockwell has been named by Committee of Mobilians to solicit funds for carrying out of "white way" idea. E. J. Buck, president of the City Bank and Trust Company, has been named treasurer. Plans include lighting of Government st. by ornamental light bearing standards, placed 130 ft. apart from Catharine st. to Conception st., distance of nearly two miles. Erection of standards complete will cost, it is estimated, \$30,000.

Monrovia, Cal.—Committee appointed by City Trustees to handle matter of furnishing Monrovia's share of great white way from San Gabriel Valley to coast, has instructed City Engineer to prepare map of conduits and lights to be erected within city limits.

San Francisco, Cal.—In letter to Mayor and Supervisors, C. D. Salfeld calls attention to advisability of immediately beginning work on municipal electric power plant at Lake Eleanor.

Van Nuys, Cal.—The Van Nuys Highway Lighting District, recently formed, will shortly install 16 miles of lighting along entire Van Nuys blvd., through towns of Van Nuys, Marion and Oceansmouth, and in San Fernando Valley. It is proposed to use ornamental three-light posts, either with iron or concrete; also conduit system will be used. Frank M. Keffer, Secretary of Chamber of Commerce, is compiling designs and other data. Bids will shortly be invited by Supervisors of Los Angeles County.

Thompsonville, Conn.—Appropriation of \$9,000 has been voted for lighting system.

Gainesville, Fla.—Board of Public Works has selected engineer to prepare plans and estimates for electric light plant.

Guyton, Ga.—City is said to be considering question of bond issue for water works and electric light plant.

Ottawa, Ill.—Within next three months system of decorative lights will be erected on Madison st., from La Salle st. to Fox River.

Bluffton, Ind.—City electric light plant employees are carrying petition around to local residents to improve plant instead of selling it.

Kendallville, Ind.—Council has contracted for \$30,000 worth of machinery which will be installed in new electric light plant. New structure will be erected for plant and bids will be received on building in near future.

Cedar Falls, Ia.—Question of municipal lighting system for this city is being discussed.

Fredericksburg, Ia.—Town will vote Nov. 4 on \$4,500 bonds for installing electric light plant.

Norway, Ia.—Town has voted to grant franchise to Cedar Rapids & Iowa City Electric Light Co.

Redfield, Ia.—Bonds of \$15,000 have been voted for electric light and water works plant.

Sheridan, Ia.—Town will vote Nov. 5 on granting franchise for electric lighting to A. Moorhouse and others.

Belle Plaine, Kan.—Bonds have been voted for electric light and water works.

Mulberry, Kan.—Resolution has been passed calling election for purpose of voting municipal bonds for erection of light and water systems for city.

Thibodaux, La.—Francis L. Knoblock, of this place, has applied to Board of Aldermen for exclusive franchise to operate fuel and gas plant here, amending his application, if necessary, to omit word "exclusive."

Worcester, Mass.—At closing session of sixth annual convention of Federation of State, City and Town Employees here resolutions were adopted advocating municipal ownership of lighting system of Boston.

Kalamazoo, Mich.—Lighting Commission will install new system of lighting system.

Olivet, Mich.—Installation of electric light system is planned.

Clara City, Minn.—Citizens are said to have voted to issue \$5,000 bonds for electric light plant.

Hutchinson, Minn.—Council will consider installing cluster system of street lighting on Main st.

St. Cloud, Minn.—The Public Service has rejected bids for white way system and will take new bids.

Darby, Mont.—Steps are being taken to establish electric light and water plant.

Hillville, N. J.—Notice of intention has been issued that ordinance will be introduced at special meeting of Council providing for installation of municipal electric lighting plant.

Spotswood, N. J.—Plans are being made to light town with gas.

Caledonia, N. Y.—Better street lighting is being discussed by village officials.

Lindsey, O.—Question of electric lights for Lindsey will be decided by vote at general election, Nov. 5.

Providence, R. I.—Much interest is being manifested in matter of new system of street lighting which will be placed before taxpayers for their consideration at coming town meeting.

Hearne, Texas.—City Council has under consideration number of bids that have been received for installation of electric light plant here.

Ogden, Utah.—Installation of better lighting system is being considered.

Latah, Wash.—City is considering bond issue to amount of \$11,000 for installation of electric lighting system.

Wenatchee, Wash.—City will vote Nov. 5 on bonds of \$6,000 for cluster lights.

Milwaukee, Wis.—Common Council will be asked to illuminate city hall in same manner that downtown business places are lighted.

CONTRACTS AWARDED.

Buena Vista, Cal.—For construction of municipal electric lighting plant by City Council, to Fulton Electric Co., at about \$5,000.

Dayton, O.—Contract for two boilers has been awarded to Babcock & Wilcox, of Cincinnati.

Salt Lake City, Utah.—Contract for installing electrical fixtures at County Infirmary has been awarded by County Commissioners to Intermountain Electric Co. on bid of \$1,483.25.

Duncan's Station, B. C.—For installation of electric light plant and distributing system to C. H. E. Williams, 615 Pender st., Vancouver, B. C.

Grand Mere, Que.—For construction of municipal electric light plant and system at Grand Mere to Allis-Chalmers-Bullock, Ltd., Montreal.

FIRE EQUIPMENT

San Jose, Cal.—Plans and specifications for fire alarm house are being considered.

Belvidere, Ill.—Installation of new fire alarm system is being discussed.

La Grange, Ill.—Purchase of extension ladders is being considered.

Indianapolis, Ind.—Bond issue of \$100,000 is being considered for erection of new fire headquarters and municipal garage.

Kokomo, Ind.—Police patrol and motor fire apparatus will shortly be purchased.

Leavenworth, Kan.—City Council has authorized Mayor Driesbach to sign contract with Howe Engine Co., of Cincinnati, for 30 horse-power fire engine.

Sedgewick, Kan.—Fire equipment will probably be purchased.

Hagerstown, Md.—Motor fire engine will be purchased for Antietam Fire Company.

Brockton, Mass.—At meeting of Brockton Board of Aldermen order calling for \$20,000 loan for additional motor fire apparatus was received and referred to Committee on Fire Department. New order calls for two additional motor combination and tractor for hook and ladder truck, now at Central station.

South Dartmouth, Mass.—Recommendation has been made in favor of engine built by Combination Ladder Co. of Providence. This apparatus is fitted to be dragged by automobile, and is equipped with two 30-gallon chemical tanks, a 20-ft. extension ladder, 12-ft. roof ladder, 4 hand extinguishers and 150 ft. of hose. Tanks are of the Halloway pattern, like those used by the New Bedford department. It was voted that Governing Board be instructed to take steps to procure apparatus recommended.

Springfield, Mass.—Additional motor fire apparatus will be purchased.

Billings, Mont.—City is considering purchase of motor combination chemical and hose wagon.

Newark, N. J.—Recommendations have been made for extension of high pressure system, fire boat and motor-driven aerial hook and ladder truck.

Whitehouse, N. J.—Sum of \$1,300 has been subscribed for purchase of fire hose and for making improvements to water works system.

Lestershire, N. Y.—Purchase of additional hose is recommended.

Ravena, N. Y.—Sum of \$5,500 has been voted for erection of new fire station.

Ironton, O.—Bids have been rejected for furnishing motor fire engine.

Youngstown, O.—Plans have been adopted for erection of fire station in Poland ave., at cost of about \$8,000.

Portland, Ore.—Purchase of motor fire apparatus is recommended.

Harrisburg, Pa.—About 200 ft. of new hose will be purchased for Rescue Hose Co.

Scottdale, Pa.—About 500 ft. of hose will be purchased by Town Council.

West Chester, Pa.—Council will be asked for motor triple combination wagon.

Pawtucket, R. I.—Joint resolution has been adopted appropriating \$3,000 for purchase of chassis for chemical and hose wagon.

Pascoag, R. I.—Taxpayers of Pascoag Fire District has appropriated \$650 for purchase of new hose for fire department and \$300 for purchase of site upon which to erect fire alarm tower.

Woonsocket, R. I.—City Council Committee on Fire Department, by a vote of 3 to 1, has voted to purchase Knox combination hose and chemical automobile for sum of \$5,500.

Wenatchee, Wash.—City will vote Nov. 5 on fire alarm system to cost \$4,500.

CONTRACT AWARDED.

Massillon, O.—City has purchased new automobile fire apparatus from Robinson Fire Apparatus Co., of St. Louis, at \$5,500 less rebate of \$1,500 for old combination wagon.

Portland, Ore.—By Executive Board, for 6 auto combination hose and chemical wagons, 1 aerial motor truck and 1 auto gasoline pumping engine, to A. G. Long, local agent for American La France apparatus, and a contract for 2 auto combination hose and chemical wagons of the Pope-Hartford make, to H. L. Keats Auto Co. One of peculiar features of majority report is that in consideration for awarding of contract to him, A. G. Long shall be required to pay to the city \$400, which was expended by city in sending committee to Denver to investigate apparatus.

BRIDGES

Tombstone, Ariz.—Cochise County's Board of Supervisors have opened contracts for building of new bridge at Hereford. There were three bidders present and they bid as follows: Midland Bridge Co., of Kansas City, \$5,700; Minneapolis Steel & Machine Co., of

Minneapolis, \$5,950; El Paso Bridge & Iron Co., of El Paso, \$6,280. After considering bids for short while board rejected them all and decided to readvertise for bids.

San Diego, Cal.—Concrete bridge to cost \$17,000 will be constructed across San Diego River at Old Town.

Washington, D. C.—Plans are being prepared for stone-faced or boulder bridge over Rock Creek, in Zoological Park, cost \$20,000.

Tampa, Fla.—It is said that City Engineer has been directed to prepare plans for temporary bridge to be constructed over Hillsborough River.

Baxley, Ga.—Construction of bridge near Baxley is being considered.

Columbus, Ga.—At cost of some \$200,000, it is planned to build great viaduct across network of railroad lines between this city and Wynnton. Cost of proposed improvement is to be covered by various railroad lines, Muscogee County Commissioners and city of Columbus, each paying some \$30,000.

Louisville, Ky.—Bids for construction of a concrete bridge over Beargrass Creek, at Eastern Parkway, and for construction of similar structure in Cherokee Park, will be asked for by Board of Park Commissioners within next few days.

Boston, Mass.—Council has passed order transferring \$2,000 from reserve fund for construction of foot bridge across railroad tracks at Ashland st., West Roxbury.

Boston, Mass.—Council has passed order accepting act of Legislature which authorizes construction of proposed Stadium Bridge, for which Larzz Anderson will contribute about \$194,000. Approach to bridge on Boston side will cost about \$35,000, of which Boston will pay one-half and Metropolitan Park Commission the rest.

Grand Haven, Mich.—Question of building new Grand Haven River bridge is being considered.

Belen, N. M.—New bridge will be erected across Rio Grande at this point.

Lisbon, O.—County Commissioners have arranged to borrow \$5,754.25 from Potters National Bank for East Liverpool so that they will have sufficient money in bridge fund when they award contracts for bridges in county.

Portland, Ore.—All bids for Broadway bridge bonds amounting to \$315,000 have been rejected on ground that they are too low, and City Auditor has been directed to advertise for new proposals.

Uniontown, Pa.—Engineer will be employed to prepare plans for construction of bridge over Monongahela River at Brownsville.

Woonsocket, R. I.—Resolution appropriating sum of \$25,000 for building of reinforced concrete bridge on Harrison ave. has been recommended by Streets and Bridges Committee and has been referred to Finance Committee.

Green Bay, Wis.—Proposition of building a bridge across Fox River, at Mason st., is being discussed; estimated cost \$160,000.

CONTRACTS AWARDED.

Phoenix, Ariz.—To Missouri Valley Bridge & Iron Co., contract for building steel and concrete bridge over Cheyenne Creek, in Navajo County, at cost of \$4,800.

Ventura, Cal.—For constructing bridges in town of Simi by County Supervisors at Ventura as follows: To M. E. Isham, of Ventura, for the Simi Bridge, at \$7,150, and Munoz & Munoz, of Los Angeles, for Tapo Bridge, at \$3,873.

Willows, Cal.—County Board of Supervisors has opened bids for contracts on Walker Creek bridge and retaining wall at Elk Creek. Beeson & Frazer's bid of \$1,732 on bridge was lowest and this same firm had lowest bid on the retaining wall at \$1,746.80.

Lewiston, Ida.—To Security Bridge Co., Minneapolis, Minn., for constructing bridge over Clearwater River, for \$46,000.

Plymouth, Ia.—By Board of County Commissioners to Rochester Bridge Co., Rochester, Ind., for construction of superstructure of Drake bridge, in Polk Township, and superstructure of the Sarber bridge in Polk Township.

Alexandria, La.—By Quadrant Parish, to Hudson Constn. Co., Alexandria, for construction of reinforced concrete bridge across Bayou Rapids.

Baltimore, Md.—By State Roads Commission for construction of Dover Bridge toward Preston, to Chesapeake Constn. Co., \$30,026.24; also for Sharptown Bridge approaches, to William H. Knowles, \$4,843.

Tunica, Miss.—Contract for constructing bridge across Beaver Dam, to G. W. Roycroft, of Tunica.

Cincinnati, O.—By County Commissioners, contract for bridges and culverts in Batavia Pike, to William Nickerson, at \$6,642.

Cincinnati, O.—To N. Ruebel contract to repair bridge and culvert in Hutchinson road, Green Township, at a cost of \$2,625. C. W. Comer was awarded contract to repair bridge at Elizabethtown, O., at cost of \$2,375. John Strong was awarded contract to repair bridges and road along Cleves and Miami roads at cost of \$1,661.20.

Lisbon, O.—By County Commissioners, contracts for 19 bridges in Washington, Middleton, Hanover, Unity, St. Clair and West Townships, total contract price for the lot being \$9,779.37. Seven of the bridges are in Washington Township. Middleton, Hanover and Unity each has three, West Township two, and St. Clair one. Contractor Theodore Bretz, of Unity Township, secured contracts for six structures, J. C. Hart two, F. L. Cox, of Kensington, four; T. A. Richardson two, William McLane, Lisbon, three, Wright & Morris, Lisbon, one, and B. F. Crist one.

Wilkes Barre, Pa.—Contract for planking of North st. bridge with either white or rock oak lumber has been awarded by County Commissioners to G. W. Hoover, of Williamsport, he being lowest bidder. Bids called for 22,000 ft. of said lumber. Mr. Hoover's bid was \$31 per 1,000 ft.

Salt Lake City, Utah.—Contracts for 2 bridges across Big and Little Cottonwood Creeks have been awarded to Fred Dreyer on bids of \$1,535 for Big Cottonwood, and \$1,185 for Little Cottonwood bridge.

Elkins, W. Va.—By Board of County Commissioners, to Canton Bridge Co., Canton, O., for construction of bridge at Valley Head, spanning Windy Run Creek. It will be of steel and concrete, 40 ft. long and 14 ft. wide.

Chippewa Falls, Wis.—By Board of County Commissioners contract to construct new bridge over the Chippewa River, four miles below Holcombe, to Continental Construction Co., Chicago, Ill., at \$5,000.

MISCELLANEOUS

Los Angeles, Cal.—Board of Public Works will hold conference with Finance Committee of City Council on subject of immediate action toward installation of municipal garbage disposal plant. Board will ask Finance Committee to authorize appropriation of \$150,000 set aside in charter for garbage plant.

Wenatchee, Cal.—More than \$42,000 for street improvements in addition to expenditures of \$150,000 for paving is improvement policy adopted by City Council when it was unanimously voted to put question of bonding city for \$42,500 up to voters Nov. 5. Improvement schedule calls for new \$5,000 electric fire-fighting machine, automatic fire alarm system to cost \$4,500, cluster electric lights in business section to cost \$6,000, and extensions and improvement of water system to cost \$27,000.

Washington, D. C.—American consular officer in Latin-American country has forwarded list of articles and apparatus required for bacteriological laboratory of government department, together with conditions of tender, all of which can be obtained from Bureau of Foreign and Domestic Commerce. All offers must be received by Nov. 18. No. 9713, Bureau of Manufactures.

Athens, Ga.—All bids submitted to County Commissioners of Clarke for building of new court house and jail have been rejected by County Commissioners and new bids will be asked for.

Indianapolis, Ind.—At special meeting of City Council ordinance appropriating \$5,000 for purchase of automobile ambulance for City Hospital has been passed.

Kokomo, Ind.—Police patrol will probably be purchased shortly.

South Bend, Ind.—Plans of George E. Kessler, of Kansas City, Mo., for elaborate boulevard and enlarged park system for South Bend may be changed slightly as result of petition presented to Board of Public Park Commissioners.

Haverhill, Mass.—Taking of Porter Island in Merrimack River, opposite Mechanic st. is under consideration in connection with plans for improving river front. If it should be decided that island is necessary for establishment of incinerator for garbage and sewerage city will seize it.

Springfield, Mass.—Springfield has awarded issue of \$525,000 municipal building bonds to N. W. Harris & Co. and Blodget & Co. jointly.

Irona, Mich.—Movement is on foot to promote City Hospital.

Pontiac, Mich.—Board of Supervisors has decided to hold special election following regular election to vote on bonding for addition to county jail. It is planned to spend \$20,000 in improvements. Question of building a municipal court building will also be taken up.

Bay St. Louis, Miss.—Bond Commission of Bay St. Louis has rejected bids received for construction of sea wall and will advertise for new bids.

Biloxi, Miss.—Petition will be presented to City Council urging issuance of bonds to build modern jail on Main st. County health officer recently condemned present jail because of inadequate ventilation.

Bellefonte, N. J.—Resolutions calling upon Essex County Board of Freeholders to issue bonds to amount of \$100,000 so that County Park Commissioners will be able to extend county park system to Belleville have been passed by Belleville Town Council.

Syracuse, N. Y.—With but one dissenting vote Common Council has adopted \$220,000 bond ordinance and unanimously approved new regulations for Syracuse Public Market. Both ordinances now go to Mayor Edward Schoenbeck for action.

Raleigh, N. C.—Board of Aldermen has provided for \$45,000 loan, \$25,000 of which will be used for erecting abattoir and rendering plant.

Portland, Ore.—Without opposition Council has approved of sale of \$250,000 park and boulevard bonds to Morris Bros. of this city.

Portland, Ore.—All bids for construction of city jail at Second and Oak sts. have been rejected by Executive Board on recommendations of Fire and Police Committees, and City Auditor has been directed to readvertise for new proposals.

Erie, Pa.—Bids on erection of building for municipal garbage plant south-east of the city have been rejected.

Chattanooga, Tenn.—Harvey Fisk & Son, New York City, have been awarded the \$45,000 of Chattanooga bonds.

Sweetwater, Tex.—City Clerk has awarded \$35,000 bond issue to Otis & Co., of Dayton, O.

Norfolk, Va.—Resolution has been passed providing for hospital for contagious diseases.

Everett, Wash.—Erection of combined city building and fire hall is being discussed.

Seattle, Wash.—Bids will be received until noon, Nov. 14, at Seattle, for purchase of \$2,350,000 Port of Seattle improvement bonds.

Seattle, Wash.—To provide for planning municipal telephone system, Superintendent of Public Utilities A. L. Valentine has applied to City Council for special appropriation of \$1,500 to enable him to prepare plans and specifications to be submitted to voters at city election next March.

Spokane, Wash.—City Council is considering new system of street signs, including installation at every street intersection in city of signs not only giving names of streets, but block number going each way.

Vancouver, Wash.—County Commissioners have ordered printed invitation to bidders for 200-ft. steel span and reinforced concrete pier over Washougal River at Camas.

CONTRACTS AWARDED.

Dubuque, Ia.—Board of Supervisors has awarded contracts for construction of drainage ditch in Coulter Valley, from city limits north to Maquoketa River, as follows: The Mulgrew-Boyce Co. was given contract for construction of open part of ditch, the north end. M. Tschirgi & Son were given contract for constructing south end of drainage system, that part which will be tile pipe.

Kalamazoo, Mich.—For erection of new police station on Haymarket by City Council to Thomas Foy of this city, whose figure was \$22,178.

Cincinnati, O.—Contracts for collection and disposal of garbage with J. T. Moorman of Indianapolis have been signed by Moorman and Service Director Price. Contracts begin June, 1913, and extend until December, 1913. Price is about \$72,000 a year.

Portland, Ore.—J. S. Winters submitted lowest proposal for construction of new city jail at \$67,340, with alternate proposals varying few hundred dollars if Pacific facing brick, terra cotta or Tenina sandstone is used in construction. Bids follow: Advance Construction Company, \$77,783; Pearson Construction Company, \$84,396; Litherland & Abrey, \$89,785; J. S. Winters, \$67,340; Victor Carlson, \$85,588; J. F. Wineland Building & Engineering Company, \$79,467; Hans Pederson Construction Company, \$83,321; Sound Construction Company, \$93,950; A. H. Lamm, \$72,500; Friborg Construction Company, \$86,429; Dinwiddie Construction Company, \$74,700; Lewis A. Hicks Construction Company, \$74,700.

Galveston, Tex.—By Galveston County, for new county jail, to M. C. Bowden, of Galveston, and the Van Dorn Iron Works Co., of Cleveland, O., in joint bid, their price being \$55,332 complete.

TOO LATE FOR CLASSIFICATION

BIDS ASKED FOR

STATE	CITY	RECD' UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Kansas.....	Topeka.....	Nov. 22.....	Constrn. 2 brk. & one concrete pavement.	Co. Comrs.
SEWERAGE				
South Dakota Sioux Falls.....	Oct. 28.....	Constrn. lateral sewer.....	W. C. Leyse, City Aud.	
Dist. of Col. Washington.....	Nov. 1, 2 p.m.....	Constrn. sewers.....	C. H. Rudolph, Chrmn. Comrs.	
Texas.....	Waco.....	Constrn. concrete storm sewers.....	J. G. Mackey, Mayor.	
Texas.....	San Benito.....	Constrn. about 3,300 ft. 8 to 18-in. pipe & two disposal plants.....	J. M. Breen, Mayor.	
Florida.....	Palm Beach.....	Constrn. 2,200 ft. concrete sewer pipe & septic tank.....	A. N. Lopez, City Clk.	
WATER SUPPLY				
British Col... Kerrisdale.....	Dec. 2, 5 p.m.....	Furn. 33 miles 4 to 12-in. steel pipe at Point Grey.....	B. A. Cunliffe, City Clk.	
Louisiana....	New Orleans.....	Dec. 12, noon....	Installing mechanical draft apparatus...	F. S. Shields, Secy.
FIRE EQUIPMENT				
Ohio.....	Cleveland.....	Oct. 28.....	Furn. two motor tractors.....	C. W. Stage, Dir. Pub. Safety.
New York....	New York.....	Oct. 30.....	Furn. three hand hose carts, one chemical engine, 74 five-gallon extinguishers, 1,500 ft. 2½-in. hose, 6 extension ladders, 1 hook & ladder truck, 6 nozzles.....	
Montana....	Billings.....	Nov. 5, 8 p.m....	Furn. comb. chemical & hose automobile.	M. G. Zalinski, Quartermaster.
				L. E. Torrence, City Clk.
BRIDGES				
Georgia.....	Augusta.....	Oct. 31, 4 p.m....	Constrn. concrete bridge across canal...	N. Wingfield, Comr. Pub. Wks.
Missouri....	Carthage.....	Nov. 7, 1.30 p.m....	Constrn. concrete bridge over river.....	Wm. Kohlman, Co. Engr.
Ohio.....	Akron.....	Nov. 13, 11 a.m....	Constrn. Case Ave. bridge.....	C. L. Bower, Clk. Co. Comrs.
MISCELLANEOUS				
Texas.....	Goldthwaite.....	Oct. 28, noon.....	Constrn. court house.....	Co. Judge.



BESSEMER BLOCK
THE MOST UNIFORM SHALE PAVING BLOCK MADE
Makes a Uniform Pavement that is Durable, Sanitary and Always in Repair
BESSEMER LIMESTONE COMPANY, Youngstown, O.

STREET IMPROVEMENTS

Pasadena, Cal.—Board of Supervisors has formed road district for macadamizing of New York ave. from Lake ave. to foothill boulevard at Santa Anita ave.

Des Moines, Ia.—Supervisors have decided to put every road in Polk County crossing Skunk River into "good roads" condition.

Rockville, Md.—Among matters committee will take up with commission is construction of pike from Woodmont to Glen Echo, distance of about six miles. Several years ago Bethesda district voted in favor of bonding district for \$25,000 for construction of road, state to contribute like sum. Road has not been built for reason that state roads commission has not seen fit to appropriate state's share.

Newark, N. J.—Ordinance has been passed for grading, curbing and flagging of Abington ave.

Roselle, N. J.—Ordinance has been passed on its third and final reading for curbing and guttering of Sixth ave., from Chestnut st. to Locust st., on both sides, with 6-in. curb and 3-ft. gutter.

Denison, Tex.—Sprinkling of Main st. is being discussed.

El Paso, Tex.—Adoption of resolution ordering paving of Franklin st., from its intersection with east line of North Kansas st. to its intersection with North Campbell st., and passing of ordinance establishing grade of Arizona st., have been discussed.

Fort Worth, Tex.—Houston st. will be repaved between 10th and Weatherford sts. Wooden blocks will be used.

San Antonio, Tex.—Measure authorizing Mayor Jones to purchase two or more road graders has been passed and \$400 was voted for this purpose.

Eastville, Va.—Northampton County Board of Supervisors have heard application of Franktown Road Commission for \$15,000 extra bonds for road purposes in that district. Board has decided that they would be obliged to provide issue and have advertised for bids.

CONTRACTS AWARDED.

Baton Rouge, La.—Council has ordered Mayor to make contract with Southern Bitulithic Company for repairs of city streets; estimated cost, \$6,000.

New Orleans, La.—City Engineer Harder has filed with clerk of finance committee of Council report in which it is stated that Etta Contracting Co. is lowest bidder on contract for surfacing with concrete clay gravel of Fontainbleau Drive, from Carrollton ave. to Audubon blvd. figure being \$9,309.45. There were six other bidders.

Laurel, Miss.—For construction of creosoted wood block paving to Southern Paving & Construction Co., Chattanooga, Tenn., at following bid: Excavation at 35c. per cu. yd.; new curb, 48c. per lin. ft.; old curb, 25c. per lin. ft.; concrete foundation, 75c. per sq. yd.; brick paving, \$1.64 per sq. yd.; creosoted wood block paving at \$1.74 per sq. yd.; total contract, \$47,793. Total bid of Creosoted Wood Block Paving Co., New Orleans, La., was \$50,320. Iowa Engineering Co., Clinton, Ia., engineers in charge.

Cape May, N. J.—By Cape May County Freeholders, contract for building Ocean City Boulevard to State Senator Robert E. Hand, lowest bidder at \$87,986.63. There were three other bids, highest being that of Sutton & Corson, \$111,536.70, or over \$24,000 more than lowest. Freeholders also awarded contract for Cape May Point Boulevard to Keeler & Miller, the firm of which ex-State Senator Lem Miller is principal member. Figures of this lowest bid were \$10,798.60. There were eleven other bids, of which Sutton & Corson's was \$14,705.30. The boulevard is about 2½ miles long.

Cornwall, N. Y.—To Abram Stevens, contract for building road on mountain from property of Messrs. Paganstaker and O'Connor, running through to Boulevard. Other roads are planned for that section.

Portland, Ore.—Contracts for following street improvements, totaling nearly \$175,000, have been let by Council, as follows: Fremont, from East 32d st. to East 8th st., gravel bitulithic, Pacific Bridge Co., \$70,000; Karl st., from East 7th to Grand ave., asphalt, Oregon Independent Paving Co., \$1,206; Halsey st., from East 39th to East 52d, Hassam, Oregon Hassam Paving Co., \$38,042; East 10th st. district, gravel bitulithic, Barber Asphalt Paving Co., \$22,231; East Main st., from East 60th to East 63d, Hassam, Oregon Hassam Paving Co., \$2,-

128; East 55th and other streets as a district, from East Stark to East Burnside, Bechill Bros., \$8,938; 73d st., southeast, from 40th to 45th aves., southeast, grading and concrete curbs and walks, \$2,284; East 33d st., from Alberta to North, grading and concrete curbs and walks, Bechill Bros., \$9,571; East 49th st., from Hawthorne ave. to Newport st., grading and concrete curbs and walks, M. Hansen, \$1,934; 56th st., southeast, from 40th to 42d aves., southeast, grading and concrete curbs and walks, Kibbe-Welton Co., \$1,098. Bids for paving Lexington ave., from East 7th to Milwaukee sts., with Hassam and gravel bitulithic pavements, have been rejected on petition of 54 per cent. of property owners affected. They want concrete pavement and new proceedings will be started for this class of improvement.

Erie, Pa.—By Council to John McCormick & Sons for asphalt pavement in 14th st., between German and Parade sts.

Harrisburg, Pa.—By State Highway Commissioner for following works: Cumberland county, Upper Allen township, 11,000 ft. to Thomas Meehan & Sons, Philadelphia; Potter county, Pike township, 3,900 ft. E. Whalen, Towanda; Jefferson county, Punxsutawney, 4,271 ft., Bennett & Sherer, Indiana; Clearfield county, Osceola borough, 3,118 ft., Baker-Owen Construction, Indiana borough, 2,854 feet, and White township, 8,894 ft., M. Bennett & Sons, Indiana.

San Antonio, Tex.—Council has passed ordinance instructing Mayor Jones to make contract with Alamo Paving Co. for paving of South Alamo and Aransas sts., from Garden st. to Nathan st.

San Antonio, Tex.—Council has passed measure appropriating \$34,000 for paving of East Commerce st., and contract has been awarded to Roach-Manigan Paving Co., of Fort Worth.

Seattle, Wash.—By Council for grading of E. 47th st. to Alfred Johnson, at \$6,140.14.

SEWERAGE

Eustis, Fla.—Ordinance No. 106 has been introduced, which provides for calling and holding of election for determining whether or not town wishes to spend \$29,000 in bond issue to construct five miles of sanitary sewerage system.

Fort Scott, Kan.—Construction of sewer for East Side, to be known as the East Side Sewer, Spencer addition, is being discussed.

Vivian, La.—Plans are being made for installation of sewerage and waterworks systems; estimated cost, \$40,000.

Newark, N. J.—Construction of 8-in. pipe sewer in North 13th st. has been authorized.

Paterson, N. J.—Issue of \$200,000 sewer bonds will be sold.

Sioux Falls, S. D.—Resolution to have lateral sewer constructed on Minnesota ave., from McClellan st. to 4th st., has been adopted.

CONTRACTS AWARDED.

Indianapolis, Ind.—By Board of Public Works to Volpn & Fritz for erection of Imhoff sewage disposal tank, contract price being \$2,146. Only other bidder was Cleary-Knert Construction Co., which asked \$4,395. Tank is to be erected at site of proposed experimental sewage disposal plant near Wisconsin st. and Pogues run. It will be of reinforced concrete construction, 33 ft. high and about 30 ft. in diameter at top and 24 ft. in diameter at the bottom.

Laurel, Miss.—By city for construction of storm sewers to S. A. Carnes, Laurel, Miss., at following bid: 750 ft. 24-in. vit. pipe, at \$1.60 per ft.; 500 ft. 20-in. vit. pipe, at \$1.15 per ft.; 100 ft. 18-in. vit. pipe, at 85c. per ft.; 390 ft. 15-in. vit. pipe, at 60c. per ft.; 260 ft. 12-in. vit. pipe, at 45c. per ft.; 270 ft. 10-in. vit. pipe, at 40c. per ft.; 4 manholes, at \$30 each; 25 catch basins, at \$25 each; total bid, \$3,064. Total bid of Hamilton Johnson, Jackson, Miss., was \$3,706. Iowa Engineering Co., Clinton, Ia., Engineers in charge.

Erie, Pa.—By Council to Joseph McCormick & Brother for construction of sewer in Third st. from Wallace st. west 300 ft.

Knoxville, Tenn.—For construction of Third creek sewer to the O'Connor Construction Co., of this city, its bid being lowest of eight submitted, \$70,218.83. This will leave balance of more than \$50,000 of \$125,000 with which to construct sewer laterals in that section of city to connect with main sewer for Tenth Ward west of Ninth st.

WATER SUPPLY

Booneville, Ark.—Construction of waterworks system is contemplated by City Council.

Washington, D. C.—Extension of city's water mains to Good Hope and high ground east of Anacostia river will be accomplished by next spring if plans now being worked out under direction of W. A. McFarland, superintendent of District of Columbia water department, materialize. Entire project will cost in neighborhood of \$40,000 and will be paid for out of general revenues of water department.

Nappanee, Ind.—Sum of \$15,000 of municipal improvement bonds has been sold.

Vivian, La.—Plans are being made for installation of waterworks and sewerage systems. Cost, about \$40,000.

Atlantic City, N. J.—It is proposed to purchase four new water wagons.

Cincinnati, O.—Plans are being made for additional 7,000,000-gallon pump for Western Hills pumping station.

Lima, O.—Bond issue of \$100,000 has been authorized by Council for improvements to waterworks.

Chehalis, Wash.—Plans are being prepared for gravity water system to cost about \$95,000.

Tacoma, Wash.—A \$75,000 auxiliary power station to be operated by waste water of Green river gravity system at McMillin reservoir, will probably be recommended by Commissioner Nicholas Lawson as result of his investigations of conditions at Nisqually power plant.

CONTRACTS AWARDED.

Chapman, Kan.—By City Council, contract for installing waterworks system for which bonds were voted some time ago, to James A. Pringle. Contract price was \$21,000. Work on system will begin at once and contract calls for it to be completed in ninety days. The tower will have a capacity of 105,000 gallons.

Topeka, Kan.—For pump for water works to Allis Chalmers Co., of Milwaukee, at \$21,000.

Barberton, O.—By Board of Control, contract to Henry R. Worthington for 500 water meters at \$6.65 each.

Wheeling, W. Va.—For Mozart Hill water system as follows: To Trimble & Lutz, for tanks and piping, \$2,913; for foundation, \$960; to Deane Steam Pump Co., for two triplex pumps, motors, piping, wiring, and starting device, \$3,935; to United States Iron Pipe & Foundry Co., for cast iron pipe and fitting, per ton, \$23.90; to Trimble & Lutz, for rising main to be placed at every 100 ft. up the hill, \$2,073; the contract for building the pumping station was awarded to H. S. Cunningham at his price of \$2,217, he being only bidder.

LIGHTING AND POWER

Marble Rock, Ind.—Electric light proposition has been voted and carried.

Abilene, Tex.—Contract has been signed whereby gas, electric, water and ice properties in Abilene, together with contracts and franchises affecting them, heretofore operated by Abilene Light and Water Co., Abilene Gas, Light, Fuel and Power Co. and Abilene Ice Co. have been acquired by N. W. Halsey & Co. of New York City.

FIRE EQUIPMENT

Longmont, Colo.—Motor fire truck will probably be purchased.

Monroe City, Ill.—Citizens are petitioning for new fire engine.

Boston, Mass.—Two motor combination wagons will be purchased at cost of \$11,500.

Melrose, Mass.—Appropriation of \$17,000 has been recommended for purchase of one motor engine, one truck and combination wagon.

Orange, Mass.—About \$2,000 has been voted by town for rebuilding fire engine.

Petoskey, Mich.—Purchase of motor combination chemical and hose wagon is being considered.

Roselle, N. J.—Meeting will be held Oct. 28 to discuss matter of purchasing auto fire apparatus at cost of \$10,000, and same will be voted on Nov. 5.

Ventnor City, N. J.—Bond issue of \$3,000 will be sold, and proceeds used for purchasing auto chemical engine.

Sioux Falls, S. D.—Purchase of motor aerial truck has been recommended.